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BRYAN J. WOOD, F.D.S. R.C.S.Eng.

From the portrait by Frank O. Salisbury, *C.V.O.*, LL.D., R.P.S.

BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

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ORIGINAL COMMUNICATIONS

CHAIRMAN'S ADDRESS AT THE OPENING OF THE FIFTY-EIGHTH SESSION OF THE DENTAL BOARD OF THE UNITED KINGDOM

By E. WILFRED FISH, *C.B.E.*

GENTLEMEN,

I have to inform you that in November 1949 the General Medical Council elected Dr. David Campbell to be their President in the place of the late Sir Herbert Eason. Dr. Campbell is Professor of Materia Medica and Therapeutics in the University of Aberdeen, and has been a member of the Council since 1936. He is therefore familiar with the dental business which is of common concern to the Board and to the Council ; and he has already given proof that he has the same practical interest in dental education as was consistently shown by his predecessor. We may be confident that the cordial relations between the two bodies will be fully maintained under his presidency, and we congratulate him and the Council on their choice.

The Board will have learnt with great pleasure that the King, on the advice of the Lord Chancellor, has approved the appointment of Cyril Pearce Harvey to be King's Counsel. It is but two years since Mr. Harvey first gave us his assistance as our Legal Assessor but already we look upon him as a valued friend whose exposition of the law to us is at once limpid and profound and whose company we prize. The rank now conferred upon him is a source of great satisfaction to us and we earnestly hope that he will continue to give us the benefit of his guidance in matters of law and the enjoyment of his companionship for many years to come.

We also greet with great satisfaction the simultaneous appointment to be King's Counsel of Stephen Gerald Howard whose association with the Board, though rather less intimate, has extended over five years. Mr. Howard was in February elected Member of Parliament for Cambridgeshire but we may venture to hope that his manifold and important obligations in the Legislature and the Courts will not deprive us of the impartial clarity with which he presents to us the facts of our discipline cases and upon which we have come to rely.

It is pleasant to see Sir Sydney Smith and Mr. Roper-Hall once again in their accustomed places. The fruits of their travels are not yet known to us but these are sure to be valuable and in the meantime we are grateful for our colleagues' safe return.

THE BRITISH DENTAL ASSOCIATION

I must refer to an important change which has taken place in the profession since we last met in session. On December 1, 1949, the three voluntary associations of dentists amalgamated into one new British Dental Association. We are told in chemistry that the properties of a compound are different from those of its constituent elements but we may hope that the compound association will retain all the best properties of the old associations whilst giving proof of new and valuable ones of its own. It is, moreover, most satisfying to find that our old friend Arthur Condry, who has served the profession so well as General Secretary of the Incorporated Dental Society, has accepted important office in the new organisation. I am sure it is your sincere desire that we should send our warm congratulations to the new British Dental Association and wish it a long and successful career.

THE REGISTER

The total number of names on the Dentists Register at the end of last year was 15,052.

The number at the end of 1948 had been 14,904, but this you will remember was exceptionally low because in that year, for the first time since 1938, a statutory inquiry was made of all practitioners registered before July 28, 1921, and as a result of this 230 names of practitioners who had died or from whom no reply had been received within six months were removed from the Register. The figure now reported therefore indicates no appreciable interruption of the steady decline in the number of registered dental practitioners which, if we omit 1948 as an exceptional year, has averaged approximately 123 since the end of the war.

Of the total of 412 names removed from the Register during the year, 189 were removed on receipt of evidence of death and 221 for failure to pay the retention fee, while two were penally erased. The names of 136 dentists were restored during the year and 424 names were added by first registration, of which last 351 were added to the United Kingdom List, 24 to the Colonial List and 49 to the Foreign List. Those added to the Foreign List included 40 from Latvia who were able after long delay to produce evidence which satisfied the Council that they had gone through a curriculum which sufficiently guaranteed their professional competence. The number of names added by first registration to the United Kingdom List shows an increase of 53 over the corresponding number for the previous year and we may confidently expect that this small improvement will be more than trebled during the current year, when the effect of the increased intake into the dental schools will begin to make itself felt. Any inclination to premature optimism will, however, be held in check by the recollection that six years ago the Government Actuary postulated an annual addition by first registration of over 800 names a year in order to achieve a Register of 20,000 in twenty years from that date.

As a result of some relaxation in the control of paper, we have been able to publish the Register in its pre-war form without reducing the number of copies available for issue. Thus in one cover may once again be found not only the United Kingdom, Colonial and Foreign Lists, but also the local list of dentists, the lists of bodies corporate carrying on the business of dentistry and of their directors, those Acts and sections of Acts of Parliament which concern the Board directly and the Warning and Important Notices issued by the Board, together with various tables and other matter of interest to those concerned with the practice of dentistry.

The Medical Bill

The profession will have observed with great interest the introduction and passage through Committee in the House of Lords of a Bill to amend the Medical Acts. The Bill as amended in Committee provides that the number of Crown nominees to the General Medical Council be increased from five to eight, five of whom are to be registered medical practitioners and three to be laymen, and that the number of members elected by the profession be increased from seven to eleven. Another proposal of particular interest to this Board is the provision for a statutory Medical Disciplinary Committee to perform those functions in connection with medical discipline which are at present discharged by the Council in full session. This Committee is to have power to administer oaths, and any party to a hearing before it may compel witnesses by writs of subpœna to attend and to produce documents. Provision is also made for appeal to the Judicial Committee of the Privy Council against an order by the Disciplinary Committee that a name be erased from the Register. These matters are all of great interest to us because of the indication which they give of some of the changes which may in due course be made in our own constitution and procedure. They do not, however, appear to affect us directly, and it appears that until the Dentists Acts are amended it will be necessary for the Council as a whole to continue to consider recommendations made by this Board for erasure from or restoration to the Dentists Register.

Another very interesting innovation contemplated by the Bill is that, with effect from a day to be appointed, a period of satisfactory service as an intern must precede the full registration as registered medical practitioners of persons qualified in the British Islands. Service as an intern must be rendered to the satisfaction of the Licensing Bodies in one or more hospitals, health centres, or other institutions approved by the Bodies. The total period of internship is to be fixed by regulations of the General Medical Council, which will be subject to approval by the Privy Council and by Parliament. The allocation of time between the various professional subjects during the prescribed period will be determined by the General Medical Council.

Dental Education

This provision gives effect to one of the major recommendations of the Goodenough Committee and it provokes a very interesting train of thought in relation to dental education and registration. There would, I believe, be much

support for the view that a similar provision for dentists would help to raise the standard of practice by increasing the experience and skill of the young graduate and by stressing the relationship between dental disease and systemic disorders. I think that most dentists who have had the benefit of close post-graduate contact with a general hospital would agree that they have emerged with a higher sense of duty and increased pride in the significance of their special vocation. Certainly a year's experience in hospital with the qualifying examination behind him would enable the young practitioner to reflect at leisure on the kind of work to which he could most usefully devote himself : whether to specialise, to enter the academic field or to settle down in general practice. It would also, of course, make provision for the dental treatment of patients in " approved hospitals or approved institutions " whose need is so great, and for whom it is at present so difficult to make any provision at all.

For the moment, however, dental education is not a responsibility of this Board, and although, as I have reported before, the General Medical Council have appointed a committee to revise the curriculum on which the dental schools and licensing bodies are widely represented, that committee does not report to this Board but to the Council ; and it happens that no elected representative of the graduates in dentistry of England and Wales is an additional member of the Council. Although, therefore, the Council have done everything in their power to implement the recommendations of the Teviot Committee and have appointed a committee composed of just those people who might be expected to sit on the Education Committee of the proposed new Dental Council, it is the General Medical Council and not the Board who must, in the performance of their duty, continue to accept responsibility for the findings of that committee.

Disciplinary Procedure

I must now say a word about the discipline cases which the Board are called upon to hear at this session. As you are aware, this is the first session at which the Board have had before them cases brought as a result of proceedings taken under the National Health Service Acts, and there are certain aspects of these cases to which it is proper that I should refer.

In the first place I should point out that these cases which the Discipline Committee have brought before you are selected from those of which particulars have been forwarded to the Board by the Ministry of Health, the Department of Health for Scotland and the General Health Services Board of Northern Ireland. Many of the cases reported were not considered by the Committee to be prima facie cases of infamous or disgraceful conduct in a professional respect, while others in which it appears that practitioners have been guilty of such conduct have not been put down on the list because of the difficulty of obtaining satisfactory evidence—a matter to which I shall return in a moment.

Those who have had no experience of the Regulations and procedure of the Board may not know that when a dentist who has been convicted in the Courts of a felony or misdemeanour is summoned on that account to appear before the Board, the Board may not go behind the conviction but must accept it as conclusive of the facts, and confine their deliberations to the question whether or not the gravity of the offence, or the circumstances in which it was committed, make it desirable that the name of the offender should be erased from the Register. In contrast, when a dentist who has been found to have committed a breach of the National Health Service Regulations has to answer for his conduct before this Board, the Board cannot accept the findings of the Tribunal or Dental Service Committee, as the case may be, set up under those Regulations, but must set on foot an entirely new inquiry. Such an inquiry is, of course, designed to serve a different purpose from those undertaken under the National Health Service Regulations. The inquiry within the Service is concerned with alleged breaches of the Regulations, whereas the Board are concerned with professional conduct ; moreover, if a breach of the Regulations is established, the Executive Council concerned may recommend to the Minister the imposition of a suitable penalty, whereas the Board have the power, not to punish, but to recommend erasure from the Register of the name of anyone whom the Board find unfit to remain a member of the profession.

I am accordingly advised that the Board should properly exclude from their consideration of these cases the previous findings of any National Health Service Tribunal or Dental Service Committee, and the Solicitor has in every instance been instructed to prepare a fresh case. The witnesses whose help the Board require will, however, very often be those who have already given the same evidence of the same offence, and since those people cannot always be expected to appreciate the difference between hearings before the Board and hearings before a National Health Service authority, a

mistaken belief that the practitioner is being vindictively tried twice for the same offence, or the call of their private affairs, may make them unwilling to help us. This has indeed occurred and accounts for the fact that not all those practitioners whom the Discipline Committee might otherwise have thought it proper to bring before you will appear. Moreover, this state of affairs will no doubt continue until new legislation enables us to summon witnesses under penalty.

There is one other aspect of these cases of which I am sure we are all acutely aware. The impact of the National Health Service Acts on the population is so much more widespread than that of the old National Insurance Acts that exclusion of a practitioner from the Health Service may entail financial loss as serious as erasure from the Register.

There can be no doubt that in framing the provisions of the Dentists Acts of 1878 and 1921 Parliament were well aware of the serious nature of a decision which would deprive a professional man of his right or opportunity to practise, and the procedure was so devised that the most careful scrutiny was ensured. This Board is composed of persons representing the dental profession, the General Medical Council and the Government in England, Scotland and Northern Ireland. Moreover a decision by this Board on the propriety of erasure is not immediately put into effect but is further scrutinised by the General Medical Council, and finally the affected person may appeal to the High Court. Parliament has, however, now authorised an additional procedure under which a dentist who infringes the Regulations made under the National Health Service Acts may be excluded from the Service, and so virtually deprived of the opportunity to practise, by the decision of a Tribunal set up under the Acts. In England and Scotland the decision of the Tribunal is subject on appeal to confirmation or revocation by the Minister of Health or the Secretary of State for Scotland as the case may be : in Northern Ireland the right of appeal is to the Supreme Court.

If, however, the infringement of the Regulations with which a practitioner is charged is not so flagrant, certain moneys due to him may be withheld. In some cases the amount withheld does not exceed the cost to the Service of repairing the damage caused by the practitioner's neglect ; in others an additional round sum is withheld, not apparently statistically assessed in relation to the amount of loss to the Service arising out of proved instances of neglect. This additional sum partakes of the nature of a fine levied in a court of law but although it is not known that any sum in excess of £1,000 has in fact been withheld, there does not appear to be any statutory limit to the amount which may be withheld in this way.

Notwithstanding any decision on these issues taken by a Minister, or by a Tribunal or by the Supreme Court in Northern Ireland, a practitioner whose conduct has involved false certification or any other act which is disgraceful in a professional sense, may, as I have said, still have to answer a charge before this Board. Finally if a dentist's conduct has been criminal, he may, of course, like any other citizen, find himself arraigned in a Criminal Court.

In making these extensive provisions for maintaining discipline Parliament clearly took the gravest view of any departure by a dentist from the strict path of professional honour, and it is the duty and practice of this Board to carry out the intentions of Parliament in this matter in so far as they may fall within their province. Any dentist therefore who might feel tempted to err would do well to reflect on these things.

THE RELATIVE AGES OF THE SWANSCOMBE AND PILTDOWN SKULLS, WITH SPECIAL REFERENCE TO THE RESULTS OF THE FLUORINE ESTIMATION TEST

BY ALVAN T. MARSTON, F.D.S. R.C.S.ENG., L.D.S.EDIN.
Fellow of the Geological Society, London ; Fellow of the Royal Anthropological Institute

OVER five hundred articles or memoirs have been written about Piltdown man, many thousands of references to the subject have appeared and continue to appear in scientific and in general literature, yet, in spite of an ever-increasing accumulation of well-grounded evidence that Sir Arthur Smith Woodward was mistaken in 1912 when he assigned the simian mandible, and in 1913 the simian canine tooth, to the same head as the human cranial fragments, nevertheless the Piltdown skull with this ape jaw and canine tooth which could not belong to it is still in 1950 being exhibited in the British Museum (Natural History) at South Kensington as a sad reflection on the standards of anthropology in this country.

Until June, at any rate, of last year, at the British Museum, *Eoanthropus dawsoni* headed

the list of human fossils as the earliest yet found, with Piltdown 600,000, Heidelberg 500,000, Pithecanthropus of Java 200,000, Sinanthropus of Pekin 200,000, Swanscombe 200,000, Steinheim 175,000, Neanderthal 120,000 years, and the age of Rhodesia man described as not known.

On June 14, 1949, I read a paper at the Royal Anthropological Institute entitled "On Piltdown Man." Recalling the original published accounts of the discovery given by the finder Mr. Charles Dawson,[1] and quoting from the text, I first made it clear that the oft-repeated claim that the skull and mandible were found alongside in the same stratum of gravel was untrue. This claim must have had a misleading effect on the judgment of many as to whether the simian mandible, canine tooth, and typically human cranial bones could belong to the same creature. The fact is that the mandible in 1912, and the canine tooth in 1913, were found in situ in the third or dark red bed, a bed containing also the ancient Villafranchian fauna represented by the fragmentary tooth remains of *Mastodon arvernensis*, *Rhinoceros etruscus*, and *Stegodon* referred by Hopwood to *Elephas cf. planifrons*, a fauna derived from the breaking down of some much more ancient gravel than the age of the Piltdown gravel spread. Being found in situ the provenance of the mandible and canine tooth was thus known. On the other hand the provenance of the skull was never *known*, it was never seen in situ. Mr. Dawson described in the text how that several years before 1911, one of the workmen handed him a small portion of an unusually thick human parietal bone. He himself immediately made a search, and although the pit was small and shallow, could find nothing more, nor had the men noticed anything else.

I quote :

> " It was not until *some years later*, in the autumn of 1911, on a visit to the spot, that I picked up, among the rain-washed spoil-heaps of the gravel pit, another and larger piece belonging to the frontal region of the same skull, including a portion of the left superciliary ridge " (*Q.J.G.S.*, March 1913, p. 117).

He took the two fragments to Dr. Smith Woodward at the British Museum (Natural History), and it was decided to make a systematic search among the spoil-heaps and gravel. They completely turned over and sifted what spoil-heap material remained, and also dug up and sifted such portions of the gravel as had been left undisturbed by the workmen.

I quote from p. 121 :

> " Considering the amount of material excavated and sifted by us, the specimens discovered were numerically small and localised.
>
> *Apparently the whole or greater portion of the human skull had been shattered by the workmen who had thrown away the pieces unnoticed.* Of these we recovered, *from the spoil-heaps*, as many fragments as possible. In a somewhat deeper depression of the *undisturbed gravel* I found the right half of a human mandible. So far as I could judge, guiding myself by the position of a tree 3 or 4 yards away, the spot was identical with that upon which the men were at work when the first portion of the cranium was found *several years ago*."

Another informative item is the description of the finding of the turbinated bone and the two nasal bones (*Q.J.G.S.*, April 1914, p. 85). I quote :

> " While our labourer was digging the *disturbed* gravel within 2 or 3 feet from the spot where the mandible was found, I saw two human nasal bones lying together with the remains of a turbinated bone beneath in situ. The turbinal, however, was in such bad condition that it fell apart on being touched, and had to be recovered in fragments by a sieve ; but it has been pieced together satisfactorily by Mrs. Smith Woodward.
>
> All the gravel in situ excavated within a radius of 5 yards of the spot where the mandible was found was set apart and searched with especial care, and finally washed and strewn as before mentioned. It was in this spread that Father Teilhard de Chardin, who worked with us three days last summer, on August 30th, 1913, discovered the canine tooth of *Eoanthropus*, hereafter described."

Now the turbinal bones, because of their frailty, are the first bones of the skull to disintegrate even in protective burials. Mr. Dawson has here stated clearly that it and the nasal bones were found when digging the *disturbed* gravel. This supports the view that the turbinal and nasal bones fell away from the skull when the skull was broken up by the workmen at least six years before. The pit was a shallow excavation by the roadside not more than five feet in depth. These bones, the turbinal and nasal, fell to the floor of the pit. The gravel spread at Piltdown has generally been considered to have been deposited by running water, i.e. to have been fluviatile, but solifluction phenomena cannot be excluded from any of the four strata of which they consist. Solifluction means the flow of semi-solid material in thawing out from frozen conditions. Now it is obvious that if the nasal and turbinal bones had fallen from the skull at the period of the distribution of the gravel spread and had thus become naturally or geologically separated from the skull, under fluviatile or river conditions they would have been carried down-stream, and under solifluvial conditions where the semi-

[1] *Quar. Jl. Geol. Soc. of London*, March 1913, April 1914, September 1915.

frozen sludge is churned up and festooned, these frail bones would have been pulverised out of existence. Hence it would appear probable that the skull to which the nasal and turbinal bones belonged found its way into the Piltdown gravels after and not during the period of the distribution of the gravel-spread by fluviatile action.

The same argument applies to the preservation of the temporal bone. The margins of this bone were completely unfused ; there was nothing to prevent this bone from falling away from the rest of the skull and being carried down stream. The retention of the temporal bone and the preservation of the nasal and turbinal bones coupled with the fact that all the characters of the skull are those of a more advanced type of man than Neanderthal man: a skull of large cranial capacity in which the direct measurements and curvature of the frontal region between the external angular process and the bregma are the same as in twentieth-century man, and in fact a wax template in this region prepared from the left fronto-parietal fragment fits my own head: a skull in which every character of the temporal bone, the depth of the mastoid process, the direction of the petrous process, the space between the zygomatic arch and the temporal squama, and, most cogently of all, where the depth and form of the glenoid cavity can be demonstrated to be the same as in modern man proving at once that the ape-like mandible and canine tooth had nothing to do with such a skull: a skull in which, by means of an acrylic template made from the external surface of the occipital fragment, it can equally be demonstrated that the depth, strength, and position of the muscle markings, as well as the sagittal and lateral curvatures of the bone, when it is transposed on a modern skull in my possession, are shown to be practically identical—when these facts are taken into account we have good reason for believing that the skull belonged to the topmost stratum and not to the third dark stratum in which the mandible was found.

The present colour resemblance between the Piltdown cranial bones and the mandible, though it may have misled people to accept the claim that the skull and mandible were found alongside in the same stratum, is not genuine. When in January 1937 I gave a paper on the " Swanscombe Skull " at the Royal Anthropological Institute, one contributor to the discussion deprecated the fact that Mr. Dawson had used a solution of potassium bichromate on the Piltdown cranial fragments to harden them, and by so doing changed their colour. The significance of this was not appreciated by me until I found a series of bones, grey in colour, filled with holocene silt, one of which, a piece of ox-pelvis, had been sawn through in two places—it had in fact been butchered—found on heaps of gravel set by the roadside near to Piltdown for road repairs, and when one of these bones was immersed in a solution of potassium bichromate, its colour was changed from grey to the dark chocolate brown which now characterises the Piltdown skull and mandible.

It was on the grounds of colour and condition that Dr. A. T. Hopwood concluded that the Piltdown human remains belonged to the older group of fauna.[1]

The original colour of the Piltdown cranial bones was greyer than they now are. Spectroscopic tests, I am given to understand, show the presence of the chromium line in all the cranial fragments as also in the mandible.

Now the topmost bed of the Piltdown gravel-spread, one foot in thickness, consists of surface soil with flints from some older gravels, pottery and implements of various ages including neolithic. It should be remembered that the fragments of the Piltdown skull and the isolated left lower molar which were found on a field two miles from Piltdown, had been raked from the surface of the field. One can appreciate the depth of the cut of a ploughshare, and realise that if these had been turned up by the plough they could not have originally been far below the surface.

This topmost bed corresponds to an age by which time *Homo sapiens*, as Aurignacean Man, had come into existence. Elsewhere in Britain Aurignacean floors have been described just beneath the sandy deposits of the last glaciation, and in Sussex, the same county as Piltdown, Magdalenean floors have been described at Hastings. An early type of Aurignacean man was Combe Capelle, and Ramström, it may be recalled, interpreted the Piltdown skull as Combe Capelle in type—a possibility supported by the geological evidence. Anatomically Piltdown man was more advanced than Neanderthal man, who in point of time preceded Aurignacean man.

The following points are taken from my general conclusions in the 1949 paper, read on June 14, 1949, before the Royal Anthropological Institute.

> "(1) The geological evidence suggests that Piltdown Man lived nearer to the end than to the beginning of the Third Interglacial period, with the possibility that he may have been post-glacial man. He was later than Neanderthal Man.

[1] Hopwood, A. T. Fossil Elephants and Man (1935), *Proc. Geol. Assoc.*, **46**, 46-60.

(2) The examination of the cranial fragments has shown they each possess the characters of Modern Man. The templates made from the occipital fragment, the fronto-parietal fragment and from the temporo-mandibular joint prove this conclusively. The temporal bone clearly shows that Piltdown man was nearer man of today than to any Neanderthal man, and that he had attained full human status.

(3) The casts made from the endocranial surfaces of the fragments point to the same conclusion. The direct measurements taken from the fronto-parietal fragment prove how closely the Piltdown brain cast resembled the large-sized brain cast of existing *Homo sapiens*. The ventral development of the third frontal convolution in itself bears witness to a higher evolutionary stage than that of Neanderthal Man. It was in no sense the brain of Lower Paleolithic Man.

Speculation as to fixing a more precise age for Piltdown Man might find definite answer were the skull subjected, as Dr. Kenneth Oakley has suggested, to the fluorine estimation test which recently settled the controversy respecting the Galley Hill remains.

As to the ape jaw and canine tooth, it has been clearly established that these had nothing to do with Piltdown Man.

Freiderichs saw in the Piltdown skull the characters of the actual Englishman, a view quite in keeping with the survival of the turbinal bone in an ' open station.' My templates and direct measurements on the bones and on the endocranial cast leave no doubt on the matter. My new identification of the mid-sagittal axis is of prime importance and is a definite forward step, since, judged by it, all those restorations of the skull in which the fronto-parietal fragment has been carried over to the right side of the head, are at fault.

It is evident that many mistakes have been made concerning Piltdown Man—many mistakes by many highly qualified and highly placed men. To err is human and none of these men have been divine.

Let the mistake be recognised. Let it be no longer defended. The fluorine estimation test seems to have opened up a new field of enquiry ; let it be applied to the Piltdown remains ; let us know what light it throws as to whether they are pre-Würm or post-Würm in age."

The Relative Ages of the Swanscombe and Piltdown Skulls

We all know that in geological time the relative levels of sea and land have changed : coal measures which originated as forests on the land surface may now be many hundreds of feet below the surface, and chalk which formed at the sea floor may now be elevated, as in the chalk Downs, hundreds of feet above the sea.

The major earth movements, such as brought the Alps into being, reached their peak in Tertiary times, since when, apart from minor uplifts, the process has been one of gradual denudation of land surfaces by water finding its way back to the sea. The Pleicestocene Period, calculated to date back from 600,000 years ago, was characterised by four major glacial periods—the Günz, Mindel, Riss and Würm Glaciations—each lasting tens of thousands of years, interspaced by three warmer phases of long duration, the Günz-Mindel, the Mindel-Riss, and the Riss-Würm Interglacial Periods.

During the cold periods the ice caps extended to lower latitudes ; more water was immobilised in the form of ice or snow on the land : less water could find its way back to the sea, and the general level of the sea was lower. With the advent of warmer conditions and the melting out of the ice, water was liberated, and seeking its lowest level scoured river channels on its way to the sea, transporting gravels and other materials, and dropping them on its bed when the velocity of the river was checked. This process would continue for thousands of years until the return of cold conditions would again immobilise the waters. Thousands of years later the warmth of the next interglacial episode would again release vast quantities of water ; the rejuvenated rivers would deepen their beds leaving stranded on the banks spreads of gravel which had been formed during the previous interglacial.

This description is, of course, an over-simplification of the matter, but it will serve to convey general principles. The picture is one of a succession of gravel terraces, at succeeding levels and periods, containing fossil remains of contemporary animal life including molluscs, and perhaps evidence of human existence in the form of humanly worked stone tools. Since many thousands, and in some cases hundreds of thousands, of years are concerned in the process, each terrace shows differences in the contained fossils, in the fauna and in the implement cultures.

In the Lower Thames, gravel terraces occur at approximately 100 feet, 50 and 25 feet above the present river followed by the 1st, 2nd, and 3rd buried channels with aggradations up to the present sea-level. The 100-ft., known as the Boyn Hill Terrace, was formed between the Mindel and the Riss Glaciations and was thus Mindel-Riss or 2nd Interglacial in age. The Swanscombe skull was found in 100-ft. Boyn Hill Terrace or 2nd Interglacial gravels. The 50-ft., or Taplow Terrace, was formed after the Riss or 3rd Glaciation and was early Riss-Würm or early 3rd Interglacial in age : the 25-ft., or Higher Flood-Plain Terrace, was later Riss-Würm in age ; and the 1st, 2nd and 3rd buried channels are correlated with oscillations in the last or Würm Glaciation.

Besides these terraces which I have enumerated higher and older levels have been recognised

higher up stream in the Thames Valley—the 600-ft. and 400-ft. Pliocene levels, the former marine, the latter essentially fluviatile, and the 200-ft., or Ambersham Terrace, which was formed after the Günz Glaciation and was thus 1st Interglacial in age.

The Piltdown and Swanscombe Gravels Compared

A visitor to the Piltdown and Swanscombe Pits would first be impressed by the difference in their depth. A photograph of the Piltdown Pit is illustrated in Plate XV (*Q.J.G.S.*, March 1913). It is very shallow. Mr. Dawson recognised four strata in the section—the topmost layer 1 foot in thickness ; bed 2, 2 ft. 6 in. in thickness ; bed 3, 18 in. in thickness ; and bed 4, 8 in. in thickness. In the photograph the depth is about the height of a man's waist. At the Barnfield Pit, Swanscombe, the floor of the pit was between 40 and 50 feet below the surface, and the skull containing layer 24 feet from the surface. Covering the Swanscombe skull layer were, from below upwards, seams of gravel, sand, a laminated silt layer, more gravel, current bedded sands, a thick band of compact laminated loam, capped in turn by a dense layer of clay 14 feet in thickness, an upper gravel and the surface soil. From the photographs shown in Plates XLVI taken on the day following the discovery of the occipital bone, and Plate XLVII taken of the parietal bone before it had been lifted from the gravel—photographs published in my paper "The Swanscombe Skull[1]"—it is clear that the Swanscombe skull found its way into the gravels at the period of their formation and not at a later period.

That same sure certainty could not be applied to the Piltdown skull. Mr. Dawson never even saw it in situ, nor could be certain whether the covering layers had been disturbed by an interment of later date. But what can be certain is those same periglacial conditions of the last glaciation which caused the solifluction festooning of the superficial deposits in North Kent, as the result of intense freezing to a depth, thawing out, and slump sludging—those severe cold conditions estimated to have endured for about 90,000 years with intervals—must have made themselves felt from the top to the bottom of these shallow Piltdown deposits. In effect, the recognition of solifluction phenomena in every stratum of the Piltdown section—the view which I advanced in my 1949 paper—cannot be denied. This was the effect of the Würm cold period.

In 1925 Mr. F. H. Edmunds, for the Geological Survey of Great Britain, investigated the Piltdown gravel spread and found that the surface of the pit was 102 and not 120 feet above sea level as Mr. Dawson had stated ; that the bottom of the gravel spread, that is the terraced shelf on which it rests, is not more than 98-ft. O.D., and is only 50 feet above the level of the nearest part of the River Ouse at Gold Bridge. Mr. Edmund's " Diagram to show the relationship of the Piltdown Terrace to the River Ouse " appears in the Geological Survey memoir on the Lewes district (1926).

Now in the surrounding district similar erosion features have been recognised as have been enumerated for the Thames Valley. Pliocene levels are recorded on the South Downs at over 600 feet and 400 feet ; the 320-ft. bevel on the South Downs corresponding to the Caton Terrace, the 200-ft. Ambersham Terrace, the 130-ft. bevel in the South Down river gaps and the Goodwood raised beach corresponding with the Maximum Submergence of the Boyn Hill Sea ; the 80-ft. bevel in the South Down river gaps and the 50-ft. Terrace south of Lewes, of Taplow Terrace age, and the Brighton raised beach—these three latter being of last interglacial age. In the face of such evidence, to regard the age of the Piltdown Terraced shelf as other than of Taplow or 50-ft. Terrace age presents difficulties which have not yet been explained away. Certainly it would be wrong to correlate it with the 1st Interglacial 200-ft. Ambersham Terrace. The experienced geologist, Clement Reid, considered that the Piltdown deposit and the plateau on which it rests belong to a base-level plain which originated about the period of the Brighton raised beach.[1] He considered it later than the maximum submergence (Boyn Hill Sea). The opinion now generally held is that the deposits correspond to those of the 50-ft. Terrace with derivatives from higher levels, or in other words instead of belonging to the 1st Interglacial as was formerly maintained, they are later than the 2nd Interglacial to which the Swanscombe skull belonged, and are now recognised as not earlier than the 3rd Interglacial Period.

Correlation of the Piltdown Terraced Shelf with the Brighton raised beach—a late Monastirian level—would make it younger still than the Taplow Terrace (Main Monastirian), the approximate dates for which, according to Zeuner, are 125,000 and 150,000 B.P. years respectively. On this terraced shelf are gravels containing a mixed fauna, one group—*Mastodon arvernensis*, *Rhinoceros etruscus*, *Stegodon*, referred by Hopwood to *Elephas cf. planifrons*—clearly out

[1] Marston. A. T. (1937) *J. Roy. Anthrop. Inst.*, July-December.

[1] *Q.J.G.S.*, 1913, **49**, 149.

of place in a 2nd or 3rd Interglacial fauna and which were regarded as Pliocene fossils but now are classed as Villafranchian, and a second group of younger fauna containing *Cervus elaphus*, *Equus cf. caballus*, and remains of beaver which could be in place in either a second or a third interglacial fauna. Also were the fragments of the human skull, part of the mandible of an ape and an ape canine tooth.

Keith in 1912 said the human skull belonged to the older group of fauna and was therefore Pliocene. Dr. A. T. Hopwood re-examining the fauna,[1] judging from the condition and colour assigned the skull to the older group of fauna. He mentioned that "Mr. Dawson soaked the first pieces in a solution of bichromate of potash to harden them! The remaining pieces were not so treated and retain their original colour."

In July 1946 at the Geologists' Association of London, when giving a paper on "Piltdown Man with special reference to the Ape Mandible and Canine Tooth," I showed, by specimens, that potassium bichromate can change the colour of a post-glacial recent bone from the Piltdown district from grey to brown, the colour of the treated Piltdown bones.

At that meeting Dr. K. P. Oakley suggested the application of the fluorine estimation test to the Piltdown remains. It was Dr. Oakley who, in 1925, when at the Norwich Meeting of the British Association I had quoted Sollas' estimate that "The height of the gravels above the Ouse is 25 metres. They may therefore be referred to the 30-metre Terrace," then rose to correct me and stated that "the Piltdown gravels had more recently been investigated by Mr. Edmunds of the Geological Survey, and the opinion now held is that the deposits correspond to those of the 50-ft. Terrace with derivatives from higher levels." And it was Dr. Oakley who wrote Section 8 of the Swanscombe Committee's "Report on the Swanscombe Skull," in which it was made clear that the Swanscombe skull was an indigenous fossil of the Boyn Hill 100-ft. Terrace and gave his reasons why "the Middle Gravels at Swanscombe should be placed within the same limits as those interglacial deposits which are regarded by Continental workers as belonging to the Great Interglacial, or Mindel-Riss period."

These opinions in plain words mean that since Boyn Hill 100-ft. Terrace deposits are earlier than Taplow 50-ft. Terrace deposits they are not of the same age, and the Swanscombe skull is earlier than the Piltdown skull.

[1] Hopwood, A. T., Fossil Elephants and Man (1935) *Proc. Geol. Assn.*, part 1.

The Swanscombe skull horizon antedated that series of events which culminated in the Maximum Boyn Hill Submergence whose effects as the 130-ft. bevel in the South Down river gaps and in the Goodwood raised beach have already been noted. The equivalent of the 130-ft. bevel in the Swanscombe district is the gravels on Dartford Heath rising to 135-ft. O.D. which I showed to be of later date than the Barnfield Lower Gravels, Barnfield Lower Middle Gravels —the surface layer of which was the horizon of Swanscombe Man, the Inter-Middle Gravel Erosion Stage—which I was the first to recognise and which was at first sceptically received but was afterwards confirmed independently by Mr. A. S. Kennard, on the evidence of the molluscan faunule, and that it—the Dartford Heath Stage—followed on the Barnfield Later or Upper Middle Gravel and Sands aggradation which at Barnfield rose from about 70-ft. O.D. up to 110-ft. O.D., and which continued on Dartford Heath from 90-ft. up to 135-feet O.D. This view I had published in "The Report of the British Association for the Advancement of Science, 1938, p. 467." It was adopted in the chart Plate 1, Scheme of Pleicestocene Chronology, by Dr. A. J. Bull.[1]

This proves on geological grounds that the horizon of the Swanscombe skull was definitely Mindel-Riss or Second Interglacial, no matter what anyone else with less knowledge of the intimate stratigraphy of the Barnfield complex of gravels may say to the contrary. Moreover the assemblage of molluscan faunule which I collected assiduously from the different stages of this complex, and which Mr. A. S. Kennard, too, collected and identified—a faunule which is a far more delicate guide to vicissitudes than is the large vertebrate fauna, this in the preponderance of 2nd Interglacial forms shows that the gravels belonged to the second, and not to the 3rd Interglacial period, as some people would now wish to believe.

Professor Zeuner, "Dating the Past," 1946, p. 145, fig. 51, estimates the date of the Tyrrhenian (Maximum Boyn Hill) high sea level at 270,000 years. From this it would appear that the Swanscombe skull is not less than 300,000 years old.

The Fluorine Estimation Test

Research into the cause of fluorosis and "mottled" enamel in teeth, work associated with the name of our member, Mr. N. J. Ainsworth, has made known to us that fluorine which occurs in minute traces in drinking water combines with hydroxyapatite in bone and teeth to form fluorapatite, and if the fluorine con-

[1] Bull, A. T., Pleicestocene Chronology (1942) *Proc. Geol. Assn.*, 52, Part 1.

centration is more than four parts per million of water can, within the lifetime of the individual, produce fluorosis.

Armstrong and Brekhus[1] find that the mean fluorine content of enamel and dentine of sound teeth has been determined to be, respectively, 0·0111 and 0·0169 per cent. The fluorine content of enamel and dentine of mottled teeth has been found to be higher than that of normal teeth.

These authors give details in the cases of two patients A and B—the results of analysis of some typical mottled teeth. Patient A, aged 16, had lived during her early childhood at Grinnel, Iowa. Most of the teeth were slightly mottled. Patient B, aged 41, had lived during the first 19 years of life at Durango, Mexico. Her teeth were all severely mottled and the enamel of many of them was pitted, broken and carious. The pooled dentine of Patient A contained 0·0504 per cent fluorine. (Pooled dentine means the dentine fractions of homologous teeth from the same person were pooled, i.e. considered as a group instead of as individual teeth.)

TABLE SHOWING THE FLUORINE CONTENT OF ENAMEL AND DENTINE OF MOTTLED TEETH

Patient	*Tooth*	*Degree of caries*	*Fluorine content*	
			Enamel	*Dentine*
			Per cent	*Per cent*
			0·0254	0·0371
A	$\lvert\underline{5}$	None	0·0246	0·0379
			0·0250	0·0425
	$\underline{5}\rvert$	None	0·0245	0·0406
B	$\underline{2}\rvert\underline{2}$	Severe	0·0357	
	$\underline{3}\rvert\underline{3}$	Severe	0·0333	
	$\lvert\underline{1}$	Moderate	0·0361	
	$\underline{1}\rvert$	Questionable	0·0343	

In July 1947 I gave a paper at the Geologists' Association of London, " Piltdown Man : with Special Reference to the Ape Mandible and Canine Tooth," where it was conclusively proved that the mandible and canine tooth did not belong to the skull, that the age of the Piltdown deposits was later than the 3rd Glaciation, that the characters of the cranium were those of man of today, and suggested that the survival of the turbinal and nasal bones pointed to the probability that Piltdown man lived either at the end of the 3rd Interglacial period or possibly later still.

In the discussion Dr. Kenneth Oakley, recalling the work of Middleton (1844) and Carnot (1893) who showed that the fluorine content of fossil bone increases with geological age, suggested that the application of the fluorine estimation test to the Piltdown remains might throw light on their relative antiquity.

In 1948 Dr. Oakley had the test applied to the Galley Hill remains, which had been claimed to be Middle Pleicestocene in age. The Galley Hill skull site and the Swanscombe skull site are in the same vicinity, but the Barnfield gravel spread is earlier than the Galley Hill deposit. For his test Dr. Oakley asked me for bone specimens from all the various stages in the Barnfield Pit and these were given, from the base of the Lower Gravel level of the Thanet Sand, from the mid-level and also the top shell-bed of the Lower Gravel, from the Lower Loam, the Lower Middle Gravel, the Skull Layer, the Silt Layer capping the gravels above the Skull Layer, and the Upper Middle Gravels which were all of Pleicestocene age. Also there was a sheep skull from the top surface soil.

The percentage fluorine content of the Middle Pleicestocene bones ranged from 1·7 in the case of the humerus of a lion from the Lower Loam, up to 2·8 for the root of a deer incisor from the Lower Gravel—the average about 2 per cent with 1·9 for the occipital and 2·0 for the parietal bones of the Swanscombe skull.[1] Note the position of the decimal point.

Bones taken from Upper Pleicestocene deposits in the same district, locality Baker's Hole, contain approximately 1 per cent of fluorine. Thus skulls of *Rhinoceros antiquitatis* 1·0 and 1·2 ; vertebra *Megaceros* 1·4 ; mandible *Elephas primigenius* 0·9 ; limb-bone *Rhinoceros* sp. 1·1—these all from Baker's Hole ; and an Ulna, *Rhinoceros*, Crayford Brickearth 1·0 per cent.

A third list of bones of Holocene (post-glacial to recent age) yielded still lower values for the fluorine content of from 0·05 to 0·3 per cent. Again note the position of the decimal point. Thus a root of sheep premolar, top-soil Barnfield Pit, 0·1 ; human skull, Kemsey's Pit Swanscombe—from dene-hole ? 0·1 ; human skull from Chalky soil, Bevan's Works, Northfleet, 0·2 : human skull from Chalky soil said to contain Romano-British Pottery, Bevan's Works, Northfleet, 0·3 : and a human tibia from a Saxon grave, 3 ft. deep in gravel, Northfleet, 0·05 per cent.

Now as compared with the foregoing, the fluorine content of the Galley Hill remains was found to be :—

Petrous bone of skull, 0·3 per cent.
Cancellous tissue of mandible, 0·4 per cent.
Right tibia, 0·4 per cent.
Loose fragment of limb-bone, 0·4 per cent.
Left femur, 0·2 per cent.

[1] Armstrong, W. D., and Brekhus, P. J. (1935) *J. Dent. Res.*, February.

[1] Dr. Oakley has given these figures in " A Reconsideration of the Galley Hill Skeleton." K. P. Oakley and M. F. Ashley-Montagu. *Bull. Brit. Mus.*, Nat. Hist., Geol., Vol. 1, No. 2, London, 1949.

This pointed to the conclusion that the Galley Hill remains were not Middle Pleicestocene where the fluorine content was about 2·0 per cent; nor to the Upper Pleicestocene, about 1·0 per cent, but to being post-Pleicestocene in age, 0·1 to 0·3 per cent.

Clearly Dr. Oakley is to be congratulated on the new field of enquiry opened up by his suggestion.

As I have already said, my closing remarks in the June 1949 paper before the Royal Anthropological Institute asked that the fluorine estimation test be applied to the Piltdown remains to show they are pre-Würm or post-Würm in age.

This has now been done, and Dr. Oakley has already published several accounts of the result. His final report has not yet appeared, but he hopes that a full account of this work will be published in *Nature* early in 1950.

However we can quote from the "Abstracts of the Proceedings of the Geological Society of London" of the meeting on December 14, 1949, which I attended.

> "The fluorine (and phosphate) content of every available bone and tooth from Piltdown has now been tested by Dr. C. R. Hoskins in the Government Laboratory. All those of undoubted Lower Pleicestocene age proved to contain 2·3 per cent fluorine, whilst in the post-Villafranchian fossils (almost certainly of several ages) the fluorine content ranged from 0·1–1·5 per cent. The *Eoanthropus* material, including all the scattered cranial fragments, the jaw and canine tooth, and the remains of the second skull found two miles away, all showed extremely little fluorine (average 0·2 per cent)."

Now let us consider the import of these values. It suggests the existence of three sets of fauna of three different ages. These are firstly the 2·3 per cent group, *Mastodon arvernensis*, *Rhinoceros etruscus* and *Elephas cf. planifrons*, of Villafranchian (earliest Pleicestocene) age, which Zeuner tentatively places between his Villafranchian and his Early Glaciation 1 (E.Gl.1), i.e. earlier than the 200-ft. Ambersham Terrace, and clearly out of place and incompatible with the level of the Piltdown Terraced Shelf.

Secondly is the group including the beaver (*Castor fiber*) and the deer (*Cervus elaphus*) which are no earlier than the Middle Pleicestocene and would be in place in an Upper Pleicestocene fauna, and which like the Upper Pleicestocene fauna from the Swanscombe district of Baker's Hole, whose fluorine content is 1·0 to 1·4 per cent, range at Piltdown up to 1·5 per cent, suggesting that it, too, may be Upper and not Middle Pleicestocene.

And thirdly there is the so-called *Eoanthropus* material with the fluorine content of only 0·2 per cent, actually lower than the now discredited Galley Hill remains, and falling within the range of the Holocene of Post-Würmian group, and at any rate clearly suggesting that these 0·2 per cent specimens were later than the 1·5 per cent specimens found at Piltdown.

In my 1937 paper on "the Swanscombe Skull[1]," I said "If the turbinate bone did belong to *Eoanthropus*, then the horizon of *Eoanthropus* is to be judged from the turbinate bone."

In my 1949 paper I gave reasons why the turbinate bone had undergone neither fluviative nor solifluvial transport, and did not belong to the period of the gravel spread. In Widdowson's "Dental Anatomy," Vol. 2, Human and Comparative, 1939, I called attention to the preservation of the frail turbinate bone and nasal bones and said "the Piltdown human remains belong to a later period than those in which they were found."

The findings of the fluorine estimation test does not refute such an argument, and to me personally the low fluorine content of the bones of the skull occasions no surprise. But what does occasion surprise is that the ape mandible and canine tooth is said to share with the cranium the same low fluorine content.

In the *Archæological News Letter* (November-December 1949) Dr. Oakley states that the Swanscombe skull is now the oldest known in Europe." It should be understood that the Heidelberg mandible is older still.

[1] Marston, A. T. (1937) *J. Roy. Anthropol. Inst.*, p. 395.

SHORT COMMUNICATIONS

CHEWING OF ANTLERS BY DEER

By E. WILFRED FISH, *C.B.E.*, M.D., D.D.Sc., D.Sc., F.D.S. R.C.S.Eng.

Deer chew the discarded antlers of the stags and to some lesser extent they chew odd bones lying about on the forest floor. It has been suggested that they do this for the sake of the calcium, since the stag grows an entirely new set of antlers each year in three or four months on a diet derived from the rain-washed peaty hill top where the water is as soft as it can be. It may be asked how the deer could chew an antler without any upper incisors and with their loose lower ones, "loose" by nature to ensure, I take it, that only the tender shoots are dragged off when the deer grazes.

To investigate this antler chewing, I collected half a dozen as I was "travelling the mountain" and they are now at the Odontological Museum in the Royal College of Surgeons. The stalker tells me he has often seen red deer, both hinds and stags, chewing the antlers and that the antler sticks out of the beast's mouth like a man smoking a pipe: and the tooth marks on the antlers support the suggestion that the deer chew the antlers with their back teeth. The stalker said that this takes

place chiefly in May and June and I immediately thought that, of course, this was when the stag is growing his new antlers ; but the hinds chew the antlers at least as much as the stags and they are not pregnant at that time of year (though lactating). However, the stalker's explanation was that the deer found so much food in May and June that they were able to satisfy their needs in quite a short spell of grazing, and, having time on their hands, "played" with the horns they found about. One must admit that they can have but few ideas on how to spend their leisure in view of the whole-time nature of the grazing job during the other ten months of the year.

Shed antlers which have been chewed by the deer. Some are almost entirely disintegrated and all bear obvious tooth marks on all the "points." (*From the* Odonto. Mus. Roy. Col. Surg.)

Finally, the stalkers had never seen the Jap deer chewing antlers, though the skull and one of the antlers sent to the College are Jap and have been chewed presumably, therefore, by red deer. The nature of the tooth marks excludes my early suspicion that it might all be a fairy tale and in fact be the foxes—it clearly is the deer.

So the question of where the stag gets the calcium for his antlers remains a mystery since Nature would surely not denude his skeleton just before the fighting period of the rut, and, anyway, we do not find osteoclasts in normal adult bone, and it is now agreed that there is no other mechanism for getting calcium out of the skeleton. Halisteresis is dead.

A CASE OF HEREDITARY ENAMEL HYPOPLASIA

By MARTIN A. RUSHTON, M.D., F.D.S. R.C.S.Eng.

Mr. D. A. Hamilton Ritchie, F.D.S. R.C.S.Eng., kindly sent me two upper third molars with the following history.

A woman was admitted to Queen Victoria Hospital, East Grinstead, for removal of two unerupted upper third molars. The maxilla was otherwise edentulous but all the lower teeth showed marked hypoplasia. According to the patient the father's teeth were similar, also those of one of two sisters, two aunts on the father's side and the son of one of these.

The third molars when removed showed extremely poor enamel covering and a pitted surface. In many places it was impossible to tell macroscopically whether any enamel was present or not (fig. 1).

Fig. 1.—Upper third molar.

One tooth was examined by means of ground sections and the other was decalcified and cut in celloidin.

The ground sections showed that there was a complete covering of enamel which was in most parts very thin indeed (fig. 2). It appeared quite

Fig. 2.—Ground section showing thin enamel layer. × 5.

well calcified but was abnormal in formation. Much of it had no prismatic structure but a glassy

appearance often with extremely fine laminations parallel to the dentine surface. In other parts prisms were present but arranged in a disorderly manner (fig. 3). There was a very large number of enamel spindles on the occlusal aspect.

Decalcified sections showed corresponding appearances. The fine laminations could be observed in the remaining organic material in some areas where there was no prismatic structure, but in others the non-prismatic material appeared as a structureless deposit staining with hæmatoxylin. In one place such a structureless layer was seen to intervene between two prismatic layers, which must indicate chronological variations in the capacity of the ameloblasts to form prismatic enamel.

The enamel spindles were also visible in the decalcified sections, each spindle resembling a balloon on a string. Their contents stained evenly and often deeply but some contained small vacuoles. There was evidence of resorption of enamel and dentine at one part of the occlusal surface. The rest of the dentine and pulp were normal.

The picture agrees well with the condition defined by Weinmann, Svoboda, and Woods (1945) which they distinguish from another hereditary abnormality in which the enamel matrix is abundant but insufficiently calcified. They state that it is probably inherited as a simple dominant, that the defect of enamel is chiefly quantitative, and that impaction and partial resorption of some of the teeth is the rule. They also say that the enamel of the teeth is in the lateral cervical parts covered by cementum, but that was not the case in the present specimens. It is a thing which not infrequently happens to teeth which fail to erupt and the presence or absence of coronal cementum is probably connected with the date of removal.

I am obliged to Mr. J. Dudley, A.I.M.L.T., for the preparation of material and photographs.

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WEINMANN, J. P., SVOBODA, J. F., and WOODS, R. W. (1945) *J. Amer. dent. Ass.*, **32**, 397.

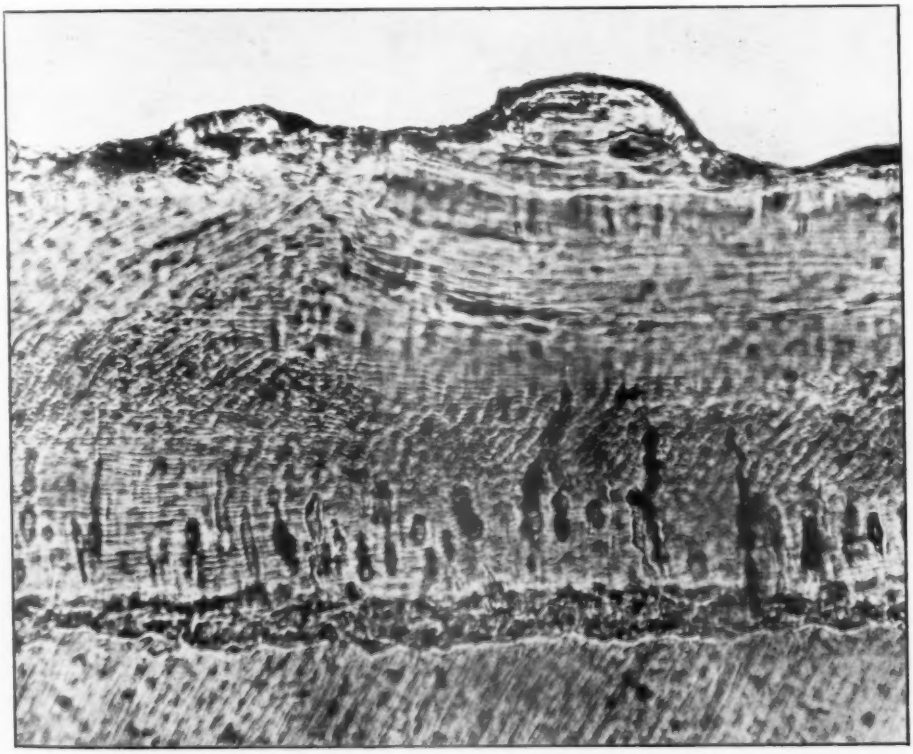


FIG. 3.—Note fine horizontal lamination bottom left ; middle prismatic zone ; glassy character top right ; and numerous enamel spindles. × 500.

A CASE OF CANCRUM ORIS IN AN ADULT ASSOCIATED WITH CARDIAC FAILURE

By N. SALAMA, L.D.S.Eng., and AZIZ HILMY, L.D.S.Eng.
Dental School, Cairo

An adult Egyptian male, aged 30, reported to the Dental School, Cairo, in a condition of severe toxæmia. On examination the gum in the lower incisor region, the floor of the mouth and the lower lip were found to be almost completely destroyed and covered with gangrenous tissue. The lower front teeth had been exfoliated. Extensive œdema and lymphadenitis of the submental region were present (fig. 1). The patient was febrile, emaciated and had a severe degree of heart failure. The infection had commenced two weeks previously. He was admitted immediately to General Hospital and vigorous penicillin therapy was commenced. At the end of seven days, two million units of penicillin had been given and the gangrenous infection had begun to heal rapidly (fig. 2). Penicillin therapy was continued until healing was complete by which time a total of five million units had been administered (fig. 3).

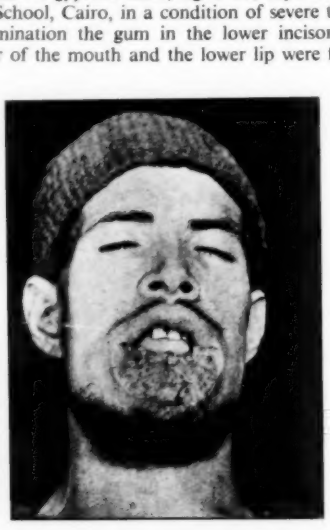


Fig. 1.—Photograph of patient showing severe cancrum oris of the lower lip before treatment.

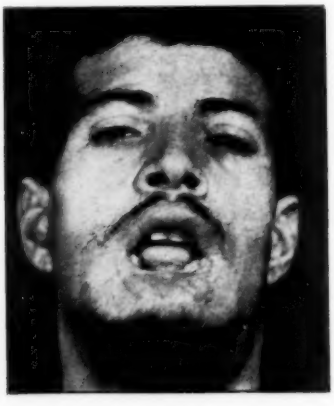


Fig. 2.—Photograph of patient after receiving two million units of penicillin showing rapid healing of gangrenous lower lip.

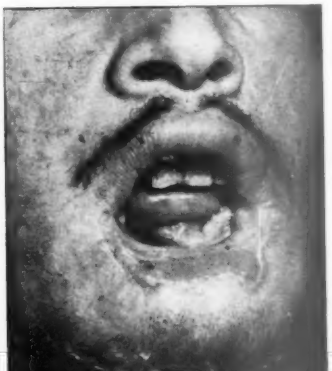


Fig. 3.—Photograph of patient after receiving five million units of penicillin showing complete cure of gangrenous lower lip.

Radiographs revealed extensive destruction of the alveolar bone in the incisor region. Smears taken from the gangrenous area showed the presence of *Bacillus fusiformis* and *Spirochæta dentium*. There was a leucocytosis and very low blood hæmoglobin. The W.R. was negative. Unfortunately although the cancrum oris was completely cured, the patient died later of cardiac failure.

EVERYDAY PROCEDURES IN DENTISTRY

A NEW APPROACH TO CAVITY PREPARATION

By J. GORDON, L.D.S.Leeds and A. MORRIS, L.D.S.Leeds

One of the chief technical difficulties encountered in cavity preparation is that of cutting into hard tooth tissue. The so-called "simple" occlusal cavity often requires a laborious cutting away of pre-carious fissures, whilst the interproximal cavity needs a well defined key cut into sound tissue to retain a filling.

In using the steel bur, the usual technique taught for cutting hard tooth tissue is to commence the preparation by penetrating the enamel with a small sharp bur until the softer dentine is reached. At

this level, the steel bur, operating much more successfully in dentine than in enamel, is used to undermine and weaken the overlying enamel layer. The weakened enamel is then removed with chisels or burs.

The objection to this method is that it can prove unsafe should the initial penetration through the enamel extend too deeply into dentine. When this happens it is very difficult to avoid cutting at the level predetermined by the depth of the initial penetration. On the other hand, should the penetration of enamel fail to reach into dentine, then the operator will have the extremely difficult task of attempting a cavity preparation with a steel bur in actual enamel. The results of these attempts can often be seen in those shallow saucer-like cavities in enamel which have failed to retain a filling.

In the method to be described however, advantage has been taken of the fact that the diamond stone is most effective in cutting away enamel, and that the steel bur is at its best when operating in dentine. Thus we have a new approach to the problem of cutting away hard tooth tissue, whereby each type of cutting instrument is used in a phase of the operation where it is operating at its maximum efficiency. The newly introduced carbide bur may be used with great advantage in this technique. This bur is harder than the ordinary steel bur and has a longer operating life. It is very efficient when cutting in dentine, but like the steel bur, ineffective when used to cut enamel. The carbide bur should thus be only used for the final finishing of the cavity in dentine.

A useful nucleus of instruments for use in the technique to be described is recommended as follows :

Knife-edged diamond wheels 3–4 mm. in diameter (for both straight and right-angle handpieces).

Round-diamond stones (Nos. 55 and 56 as supplied by Solila for right-angle handpiece).

Inverted-cone diamond stone (No. 48 as supplied by Solila).

Small inverted cone carbide or steel bur.

Medium sized steel bur (rose-head) for caries removal if preferred to excavators.

The nucleus should be housed in a small chromium bur-stand. As each instrument is discarded after use, it should be dropped into a small glass dish containing surgical spirit. The dental attendant can soon be trained to set the instruments up in the bur-stand ready for the preparation of a cavity. Since the same nucleus of instruments can be used many times for practically any type of amalgam cavity, much of the time usually devoted to selecting the appropriate bur from a crowded bur-block is saved.

It is very important that all cutting should be done under an atomised spray of warm water (100° F.) directed by the chair-side attendant on to the stone or bur, which is revolved at high speed. This reduces the frictional heat developed in cutting, reduces vibration (the spray appears to act as a type of cushion), and keeps the cutting tool free from clogging by debris. At the very final finishing of the cavity floor, it is permissible to cut dry under a gentle jet of warm air.

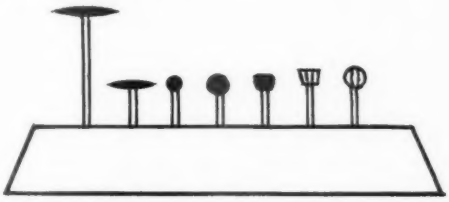
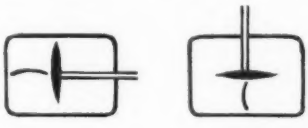


FIG. 1.—Nucleus of diamond stones and carbide burs in a small chromium bur-stand.

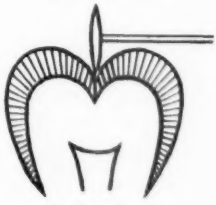
MOLAR OCCLUSAL CAVITY

The following description is that of the technique for preparing an occlusal cavity in a lower molar. Once the essentials are appreciated they can be quickly adapted to other types of cavity in other teeth.

The first step is to open up the fissures. This is speedily accomplished by sinking the knife-edged stone into enamel as deeply as the mandrel will allow, using a lateral movement. The stone should be placed mesio-distally and then bucco-lingually to do this. In a surprisingly short space of time the enamel over the fissures will disappear (fig. 2).



Occlusal view.



Sectional view.

FIG. 2.

The next step is to use the small round diamond stone to deepen and widen the slices in the enamel (fig. 3). It is especially necessary to sink the stone well into the enamel at the extremities of the fissures. This is followed by the inverted cone diamond. This will sharpen the angles, flatten the floor and slightly deepen the cavity (fig. 3*b*).

FIG. 3*a*.

FIG. 3*b*.

The cavity may now be finished with the carbide or the steel bur (inverted cone). This will sharpen the angles still further and carry the cavity nicely into the dentine (fig. 4). Any remaining caries may be removed by excavators or the rose-head bur.

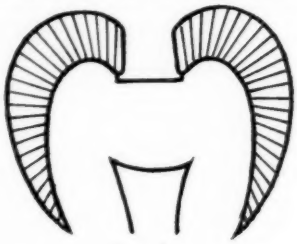


FIG. 4.

INTERPROXIMAL CAVITY

For the interproximal cavity, consideration should first be given to the preparation of the occlusal key, ignoring for the moment the actual interproximal caries. The key may be prepared in the same way as the occlusal cavity described above. Where a dove-tail occlusal key is required, this is easily prepared by laying a knife-edge wheel mesio-distally along the occlusal surface of the tooth and giving it a slight bucco-lingual arc to the width of the dove-tail (fig. 5). The dove-tail may be deepened as described for the occlusal cavity.

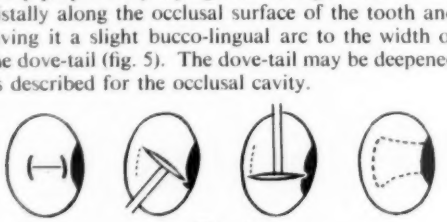


FIG. 5.

The interproximal part of the cavity may be treated by cutting away any overhanging enamel with a sharp straight chisel tapped by a small surgical mallet held by the chair-side attendant, and excavating and finishing in the recognised ways.

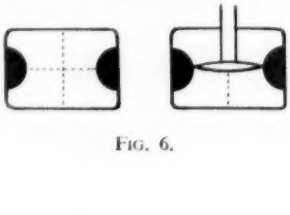


FIG. 6.

The mesial-occlusal-distal preparation is commenced by joining the mesial and distal cavities with an occlusal slice, using the knife-edged wheel. The occlusal surface is first prepared by the method described for the ordinary occlusal cavity, and the interproximal cavities are then treated as described above (fig. 6).

SUMMARY AND CONCLUSION

(1) The technique described is of use in facilitating the preparation of cavities in hard tissue especially where the cutting is likely to be laborious using ordinary steel burs and where the operator may be tempted to seek an easier and less thorough method.

(2) Advantage is taken of the efficiency of diamonds in removing enamel and of steel or carbide burs for making precise cuts in the dentine.

(3) Since cutting proceeds into dentine by easy and logical stages, it is safer and less traumatic than where all cutting is done at dentine level.

(4) The same nucleus of instruments is used for practically any type of cavity, thus time in selecting burs from a bur-block during the operation is saved.

(5) Since the cutting operation commences at a level far from the pulp, the patient is psychologically better prepared than if the operation commences at some point deeper in the tooth structure.

(6) Accent is placed on the need for cutting under a warm water spray and reference is made to the great help possible to the operator by the co-operation of a well-trained chair-side attendant.

(7) The original principles laid down by Black for preparing cavities may be adhered to in every way.

Practical Note

LUBRICATION WHILE CUTTING ACRYLIC RESIN

BY J. M. ALEXANDER, L.D.S.Eng.

CONSTANT use of the accelerated acrylic materials, mentioned by Mr. Cutler in his article in the April 6 number of the *B.D.J.*, has led to the extension of their uses during the past few months to processes hitherto impractical in dentistry. These procedures, which include the easy alteration of individual tooth position on dentures and many others not necessary to mention, require accurate cutting of the parent denture acrylic with either bur or fretsaw. The reduction of frictional heat to prevent clogging of the acrylic chips is essential to success and may readily be affected by the simple expedient of directing a stream of cold water to the area during the cutting process.

Water appears to form so perfect a lubricant for polymerised acrylic resin that the cutting of this most useful material by means of burs and fretsaws is immensely facilitated. This method is greatly to be preferred for the more delicate cutting and trimming of acrylic resin.

BRITISH DENTAL JOURNAL
JUNE 2, 1950

THE WRONG WAY

THE debate in the House of Commons on the cut in the remuneration of dentists, cannot be said to have clarified the position to any appreciable degree. The two points on which there was a measure of general agreement were that the dental service is costing too much and that there are not sufficient dentists to give a complete comprehensive service to the whole nation. The truth of the second proposition is self-evident. It never has been the case, either in this or any other country, that the number of dental practitioners was adequate to give full dental treatment to all who need it. The question always has been, what proportion of those in need of treatment would ask for it if it were to be available either free or at a cost which the patients were prepared to pay for it. The demand, stimulated by the introduction of the Health Service, has proved to be greatly in excess of even the most optimistic, or pessimistic according to the point of view, estimates, with the result that the profession has been overworked and, as a consequence of the volume of treatment undertaken and the long hours of chairside work, the earnings of dentists have been very substantially increased. The Report of the Spens Committee demonstrated, beyond question, that in the past the profession, taken as a whole, had been inadequately remunerated, and that it was urgently necessary to ensure that dentists taking part in the Health Service should be able to earn considerably higher incomes than they had in the past. The question whether the scale of fees, as settled by the Minister in June, 1948, went too far in that direction was obviously one which had, sooner or later, to be thrashed out in detail in the light of fuller information than was available at that time.

Clearly, however, the overall cost of the Service is only one of the factors relevant to such a discussion, and it is entirely unjustifiable for the Minister to impose successive cuts in the scale based solely on this single consideration. It is to be noted that in respect to the latest reduction, the offer of the Ministry to negotiate is limited to negotiating some other method of reducing the total cost by an amount equivalent to that which the 10 per cent cut is calculated to effect. It may well be asked, is this procedure likely to lead to an increase in the number of candidates for admission to the dental schools of the country? Part of the terms of reference to the Spens Committee were to consider "the proper social and economic status of general dental practice, and its power to attract a suitable type of recruit to the profession," and subsequent events have but emphasised the importance of the latter aim being kept steadily in view by those who are responsible for the dental service.

We are very far from holding any brief for dentists who are false to the best traditions of the profession by subordinating professional considerations to those of monetary gain. Indeed, the great body of the profession has every reason to feel resentment at the undeserved measure of reproach which the publicity accorded to the misdeeds of this small minority has brought upon the whole profession. It is, however, a little disingenuous to suggest, as the Parliamentary Secretary to the Ministry did in the recent debate, that the professional organisation could "assist in effectively controlling its own members so as to ensure that a proper service is given." It is probable that the worst offenders are not, in fact, members of the British Dental Association. In any case, the Ministry and the other bodies responsible for the Health Service have, at their disposal, elaborate disciplinary machinery with which to achieve this aim, and there is abundant evidence that the professional members of Dental Service Committees are as keen as their lay colleagues to use this machinery to the full to check undesirable practices and maintain the standard of the Service. There is a tendency to assume that because a dentist earns more than a certain amount of money per month or per annum, he is necessarily not doing his work properly. Cases which have been the subject of investigation, have shown that any such general assumption would be unwarranted, and the most that can be said is that abnormally high earnings possibly call for careful scrutiny. It is an inescapable feature of any fixed scale of fees that the fast worker will tend to be overpaid in terms of hourly rates, and the slow worker to

be underpaid. If any attempt is made to adjust the scale to fit the former, the latter may well be driven to revert to private practice. This is probably happening already, and it is wholly unjustifiable to stigmatise dentists who exercise their right to practise in the way they choose as anti-social or unethical. The Government have offered a comprehensive dental service to such of the community as may be able to obtain it, and they have, in effect, left individual members of the profession to select the patients who are to be given complete treatment. This haphazard arrangement places an unfair burden on the profession, and is, moreover, economically unsound and scientifically indefensible.

The recent decision to enforce the time limits for the completion of treatment, justifiable as it is on many grounds, will intensify the pressure on dentists and lead to an increase in the number of would-be patients who are unable to obtain complete treatment. In the case of denture patients, postponement of treatment is a matter often only of minor concern, whereas the consequences of delaying conservative treatment, particularly in young patients, are nearly always more or less disastrous. Cutting the scale will do less than nothing towards improving the Service. It may divert a proportion of cases to private practice, and so reduce the ostensible cost to the State, indirectly as well as directly. It will do so, however, at the cost of the goodwill of the profession, without which a wholly satisfactory Service cannot be established. If there is a limit to the amount of money which the Government is prepared to expend on the dental care of the community, common sense dictates that the scheme should be recast so as to get the best possible value in terms of dental health for that amount. Tinkering with the basis of remuneration emphatically is not the way in which to achieve that result.

NOTES AND COMMENTS

Proposed General Dental Services Committee

THE proposal to set up a General Dental Services Committee representative of the British Dental Association and Local Dental Committees has been carried a stage further, invitations having been issued for a Conference on the subject to be held in London on Saturday, June 24. The deliberations of this conference will probably be of a preliminary character only for, although the general outline of the plan put before the Representative Board will be familiar to those taking part in the conference, it is not to be expected that final agreement on all the details of the scheme could be reached until after the representatives of local dental committees have had an opportunity of consulting their constituents.

Dental Whitley Council (Local Authorities)

THERE now seems to be every reason to expect that a Whitley Council to deal with the remuneration and conditions of service of dental officers employed by local authorities will be set up in the near future. The original difficulties with regard to the conversion of Committee C of the proposed Whitley Council for the whole profession have, it is understood, been overcome, and an official announcement of the appointment of the restricted Council may shortly be made.

Two Pioneers

THE Singapore newspaper "*The Straits Times*" devoted its leading article on May 2 to an appreciation of the pioneer work of two dentists—Professor E. K. Tratman and Mr. C. F. Mummery, on whom the Fellowship in Dental Surgery of the Royal College of Surgeons had been bestowed by the Dean of the Faculty of Dental Surgery of the College. Professor Tratman became the first Professor of Dentistry in Singapore in 1929 and from modest beginnings, with two students working in two rooms, he has been responsible for building up the present modern dental school and has had the satisfaction of obtaining recognition of the L.D.S.Singapore by the General Medical Council. Mummery had been in private practice in Malaya before being appointed, in 1929, as dental surgeon in the service of F.M.S. Government. For several years he carried on single handed, travelling all over the country. After the war he was appointed Chief Dental Officer and was made responsible for the whole of the dental services of Malay States. It is good to know that the efforts of these two men to bring the benefits of modern dentistry to the large community they have served are adequately appreciated.

The Writing of Articles

DIETICIANS have long recognised the important part which the attractive presentation of food plays in promoting appetite—a part only second to that of the nutritive value of the food itself, as expressed in calories and quantities of protein. An analogous principle can be applied to mental food. An article or a book may contain much invaluable thought and information but yet be presented in such a form as to render it almost indigestible to all but a few.

Literary style can hardly be taught but the observance of a few simple rules will do much to render articles more acceptable to editors than they would be if they are disregarded. That manuscripts should preferably be typed and on one side of the paper only hardly needs saying, but not all writers appreciate the desirability of using double spacing and wide margins, both features which commend articles to editors and printers alike. Errors which are much commoner than would be supposed are the indiscriminate use of capitals and the excessive use of italics, the latter of which can do much to ruin the look of the printed page without necessarily adding anything to the emphasis of the words themselves. Two other points are worth bearing in mind. An article of any length is always improved if, at the end of it, the reader is provided with a short summary of the principal points in an orderly sequence, and, if there is a table of references to the work of other writers, these should be set out in the order adopted by the Journal for which the article is intended. This order has now been standardised for scientific journals. It runs—author's name, initials, date of contribution or year of publication, title of article, name of book or journal, volume, page, and in cases of books the name and town or city of the publisher. The inclusion of these items in their correct order does much to facilitate the essential checking of references by both editors and readers.

Fifty Years Ago

From the "Journal of the British Dental Association," June 15, 1900.

It fell to the lot of the leaders of the Odontological Society to go about the matter in a more quiet, resolute, and effective manner and they obtained the first great position which enabled them to induce dentists to educate themselves, and that was a Charter from the Royal College of Surgeons. It should never be forgotten, in reference to that body, that they procured that Charter when there were little hopes of their ever recouping themselves for the expense. It cost them over £800, and I doubt if they have ever recouped themselves. They gave us the Charter, and then we were in the position of permissive legislation, and our students studied without any compulsion, but from sheer desire to acquire this diploma of the Royal College of Surgeons.

From a speech by Mr. J. Smith Turner.

LETTERS TO THE EDITOR

ANAEROBES IN CARIOUS LESIONS

SIR,—Recently Evans and Prophet (1950),[1] using empirical methods have shown that some species of clostridium and bacillus elaborate during growth enzymes which can disintegrate the insoluble organic component of dentine.

In the course of studies on the metabolism of the salivary flora, we observed that, given the right conditions, anaerobic processes may be of considerable importance in the mouth (Hartles and McDonald, 1950).[2] We further suggested that an environment favourable to anaerobiosis may arise locally in the mouth, for example in or under a dental plaque, or in a carious lesion. As a result of these observations we cultured several carious teeth anaerobically, and were successful in isolating from all but one a clostridium of a yet unidentified type.

From the biochemical point of view, our interest is mainly in the possibility that an anaerobe may be involved in the disintegration of the tooth. This is of course no indication that anaerobes play any important part in the initiation of caries in the enamel.

Our intention is to study the metabolism of the anaerobes in relation to dental tissues. This preliminary observation is made in view of the interesting results obtained by Evans and Prophet who approached the problem from quite a different direction.

One of us (N. D. M.) is indebted to the Medical Research Council for a whole-time grant.

School of Dental Surgery, Biochemistry Department, University of Liverpool.

Yours faithfully,
R. L. HARTLES.
NORMA D. McDONALD.

[1] EVANS, D. G., and PROPHET, A. S. (1950) *Lancet*, **i**, 290.

[2] HARTLES, R. L., and McDONALD, N. D. (1950) *Biochem. J.* (In the Press.)

HYDROCOLLOID IMPRESSION TECHNIQUE

SIR,—Having used the hydrocolloid technique in general practice for the past fifteen months, may I add the following notes to those of the published article by E. C. Hampson.

My colleague and I find that 90 per cent of all inlay cavities and almost every type of bridge using the inlay and ¾ type of abutment can be constructed by this method. Jacket crowns can also be made by this technique. The chairside time occupied is at least halved and the strains on patient and operator very much lessened, whilst the results obtained are amazingly accurate.

The material is prepared first thing in the morning by one of the assistants and is stored in thermostatically controlled glue pots. An excellent unit containing two compartments set to the correct temperatures was made to my specification by Barlow Whitney.

By training one of the assistants to line the tray and load it with hydrocolloid whilst the tooth is being prepared very little time is wasted.

The usual technique is to select an ordinary partial tray and line it with elastoplast to retain the material. The ends are then blocked with soft composition and the tray carefully pressed up on to the teeth on either side of the preparation. This is removed and allowed to cool. By this method the composition acts as a positive stop and also retains the hydrocolloid, whilst the tooth preparation is being completed the tray is loaded and stored ready for use in the tempering bath.

We always chill the impression in the mouth for four minutes and remove it with a sharp tug.

The method we use for model casting is to mix Calestone in the ordinary way and to squeeze out moisture in a linen napkin, until the stone is quite thick

and putty like. It is then vibrated mechanically into the impression. After it is trimmed and has set the model is soaked in a mixture of liquid paraffin and paraffin for twenty-four hours. The resulting model is so hard that it is almost impossible to scratch the surface.

For inlay work we include a bite impression as recommended by Leatherman, using two thicknesses of Alminax with a layer of tin-foil between them.

Might I finally add that I am sure that the hydrocolloid technique when mastered will prove one of the greatest boons to the profession, and a saver of both time and strain in these days of overworked practices. All the materials we use with the exception of the actual hydrocolloid are readily obtainable. Incidentally, the hydrocolloid we use is "Dentocoll"—an old favourite amongst practitioners in this country before the days of Zelex, which I predict would enjoy greater attention than ever from the profession should the manufacturers choose to make it again for the British market.

13, *Chapeltown Road*, Yours faithfully,
Leeds, 7. J. GORDON.

TIC DOULOUREUX

SIR,—I have not seen a great number of cases of tic douloureux but every case seen has had extractions at some time in the same nerve area as the pain. For a long time I have browsed over the idea that after any extraction the nerve is forcibly separated, usually at its entrance to the root canal and that, being highly elastic, there may often be cases of portions of the dental nerve being left behind.

In such a case it seems probable that the free nerve end may curl up on itself and be duly built round by osteoblasts.

It also seems possible that, at some later date, the tissue changes may involve either pressure upon this nerve terminal or the nerve tissues themselves may proliferate to form a small neuroma which is quite hidden away and encased.

If this is so—but I am only mentioning it as it may stimulate some more knowledgeable thought on the subject—it may well be that surgical curetting, or even breaking down with a bone drill of the dense structure in these areas may be well worth trying.

It seems rather a tiresome operation but it is in no way a major one, and any method which may alleviate such intense suffering would be justified if it is considered to be reasonable.

As mentioned above, I merely write these personal thoughts to obtain the benefit of more advice on the subject, as I find there is very little in the literature which gives rise to hopes of a lasting cure.

53, *Wimpole Street*, Yours faithfully,
*London, W.*1. S. L. DRUMMOND-JACKSON.

CARIES CONTROL

SIR,—In the "field" test of Gottlieb's method of caries prophylaxis (reported in this Journal on April 6) one half of the upper jaw was used as a control. Mr. Cowan writes: "I should like to know whether the untreated teeth left as a control received the very thorough cleansing and polishing given the impregnated teeth?

They were. But the actual impregnation entails further vigorous brushing and polishing with the solutions of the drugs. There is no way of eliminating this variable unless the control side is brushed and polished with plain water. Since the whole operation takes up much time this detail was omitted and the significance of its omission is not thought serious.

In right-handed children (the large majority of them) the left side of their mouths may be brushed more efficiently than the right side. Since most of the subjects of the test rarely cleaned their teeth and many never did, this generally observed fact was ignored in deference to the fact that in the conditions in which the work was carried out it was found easier by the right-handed operator to stand behind the patient and impregnate the left side.

11 *Crescent Road*, Yours faithfully,
Ipswich. J. R. TOLLER.

RE-ERUPTION OF INCISORS

SIR,—I was interested to read of Mr. Malcolm Gibson's case of re-eruption. I had a case a few years ago with points of similarity, but in this instance permanent teeth were involved.

A child of about 9 years of age (I cannot be exact, as my records are no longer available to me) had been attending for conservative treatment, and I had been contemplating orthodontic treatment to correct an upper protrusion. She was brought to me one day after a fall in the playground, and I found that $\underline{|12}$ had been driven back into the alveolus to the extent of making them $\frac{1}{8}$ inch shorter than $\underline{21|}$. Eruption of $\underline{1|1}$ had been complete, of $\underline{2|2}$ nearly complete.

After radiographing to make certain that no fracture had occurred, I advised only local application of tincture of iodine to the damaged area, to be continued daily until all inflammation had subsided. Much to my relief, both teeth re-erupted to their original extent, and became just as firm as their fellows.

After a lapse of a few months orthodontic treatment was commenced, and eventually completed successfully.

The last time I saw the girl (age 14), both teeth were vital, and there was nothing to show which side had been injured.

122 *London Road*, Yours faithfully,
Southborough, J. R. C. HINDLE.
Tunbridge Wells.

Reviews and Abstracts

"KLINISCHE ZAHNHEILKUNDE UND IHRE GRENZGEBIETE." Fourth Edition. By Peter Paul Kranz, Professor of Dental and Oral Surgery of the University of Munich. Carl Hanser, Munich. Pp. 553.

This book, which is written primarily for students, attempts to deal with the whole range of dental and oral surgery. The result is a concentrated but undetailed survey, which forms an adequate book of reference for the post-graduate student, but does not sufficiently cover the requirements of the undergraduate.

There is no chapter on local or general anæsthesia, and no reference to the relevant anatomy and

pathology of the larynx. This book represents the knowledge of ten years ago, and does not deal with important recent developments. Some additional tables and colour photographs would be an advantage in further editions.

PRINCIPLES AND TECHNICS FOR COMPLETE DENTURE CONSTRUCTION. First Edition. By Victor H. Sears, D.D.S., Formerly Professor of Prosthetic Dentistry, New York University. Certified by the American Board of Prosthodontics. The C. V. Mosby Company, 1949. Pp. 416. Price 36s.

This book has been written for American students and the general methods described are not those of British practice. Because of this it is unsuitable for serious reading by undergraduates in this country. It must face the same criticism when considered as a book for the practitioner but this does not mean that the practitioner will find nothing of use in it. Provided he is prepared to sift out the mass of elementary information and then judiciously to select from what remains, he will not waste his time in reading this book. But it is difficult reading and suffers considerably from over-condensation in parts, so that it cannot be recommended to anyone who is not prepared to spend time on it and to supplement it by reference to other publications.

The author is obviously learned in his subject and has planned his book well, so that for the American student, whose reading would be reinforced by lectures and demonstrations, it would probably serve as a good textbook. Because of this it is unfortunate that the book cannot be more favourably reviewed as one for use in this country.

Mercury Analysis of One Hundred Amalgam Restorations.—The usual recommended mercury ratio by weight is 60 per cent but a little in excess of this is actually used to aid amalgamation. This excess is expressed suitably before packing, or during this operation. Past studies on laboratory specimens have proved that the final content may vary between 40 per cent and 54 per cent. In the present study, 100 old amalgam fillings were suitably prepared and analysed. It was found that the average mercury content was 45·4 per cent, with extremes of 28·6 per cent and 61 per cent. It is important that the manipulative technique should be such that amalgamation is complete, and that maximum mercury is expressed. In this way the greatest strength and resistance to tarnish will be achieved.—PHILLIPS, R. W., and SWARTZ, M. L. (1949) *J. dent. Res.*, **28**, 6.

The Electromagnet as an Aid in the Removal of a Metallic Fragment from the Body of the Mandible.—During the extraction of a lower third molar the tip of an elevator broke off and was forced through the floor of the socket into the region of the mandibular canal. The tip was localised by means of lateral and occlusal X-rays and after a few days, when the inflammation had subsided, access to the region was obtained by turning back a large flap of mucosa under local anæsthesia. Bone was carefully removed until the elevator tip was exposed to view. It was then removed by bringing into contact with it the tip of an impactor point spliced to the end of an ophthalmic electromagnet. Healing was uneventful.—ORINGER, M. J. (1950) *Oral Surg.*, **3**, 169.

Efficacy of Molten Metal for Sterilisation of Root Canal Instruments and Materials.—Root canal instruments, absorbent points and cotton pellets were contaminated with many types of organism, some of them spore-forming, and then immersed in the molten lead-tin alloy of molten metal sterilisers, the temperatures of which ranged from 218° C. to 280° C. Culture media were then inoculated. No growth was obtained from instruments after immersion for two seconds. Contaminated absorbent points required five seconds' and cotton pellets ten seconds' immersion before becoming sterile. —STEWART, G. A., and WILLIAMS, N. B. (1950) *Oral Surg.*, **3**, 256.

THE HEALTH SERVICE

THE 10 PER CENT CUT

WHEN the Minister of Health made it clear that he intended to proceed with the imposition of the 10 per cent cut in dentists' remuneration without exploring thoroughly the alternative suggestion made to him by the Association, it was thought desirable to bring the Association's case to the attention of the three main parties in Parliament, in the hope that it would find some support.

The Conservative Parliamentary Party and the Parliamentary Labour Party were accordingly asked if they would receive a deputation from the Association for this purpose. The Health Sub-Committee of the Conservative Housing and Health Committee agreed to this request and on May 9 a small party from the Association consisting of the Vice-Chairman of Council and the Chairman of the Remuneration and Health Act Committees, and members of the Secretariat, attended before the Sub-Committee and explained the Association's views on the Regulations which were at that time lying before Parliament. A number of questions were asked by members of the Sub-Committee and the meeting lasted for an hour.

After some correspondence with the Association the Parliamentary Labour Party decided that they could not agree to receive a deputation. Steps were also taken to bring the Association's case to the attention of members of the Liberal Party.

PARLIAMENTARY DEBATE

Reduction in Remuneration

ON May 15 in the House of Commons Mr. Baird (*Wolverhampton North-East*) moved to annul the Regulations which effect a 10 per cent reduction in the remuneration to be paid in the general dental services.

Mr. Baird opened by saying that the cost of the general dental services was unduly large in relation to the cost of the health services as a whole. He did not object to a cut in fees but he believed that the Minister's method of imposing that cut was wrong. Some twelve months ago dentists' remuneration had been cut by 20 per cent and the Minister had now arbitrarily imposed a further cut of 10 per cent as a result of which all sections of the dental profession would suffer. The dentist who was slow and a good worker and who was doing a limited amount of work would suffer just as much as the dentist who

was making as much as he could, working as fast as he could and getting as big a turnover as possible.

Mr. Baird's objection was that the Government should not penalise the good dentist, for that was what the Minister was doing, but should get to the root of the problem and penalise the " spivs " in the dental profession who were exploiting both the Government and the general public.

There had been much loose talk recently about dentists' incomes but in nearly all cases figures quoted had been gross figures and referred to a very small section of the dental profession. The Minister had originally allowed 52 per cent of the gross figures as the dentists' expenses. Since that figure was fixed there had been a cut of 20 per cent and another cut now, totalling 30 per cent, but the cost of running the practice was still the same. He suggested that the percentage allowed for expenses should be something like 70 per cent.

The House should realise that dentists were working very long hours to make these high incomes. There was a much bigger demand for dental services especially from the lower income groups than ever before. Therefore, whatever cut was imposed it must not penalise the man who was doing his best to work the Act sincerely and to do good work.

The Ministry was going the wrong way about it. There should be more supervision of the work done by dentists. If the dental staff of the Ministry of Health were at full strength it would ensure a better control over expenditure. Of an establishment of 44 dental officers there were only 22 serving and on the Dental Estimates Board only 5 were serving where the establishment was 12. The reason for this was simple. The dentists employed by the Ministry of Health to carry out the most responsible job of adjudicating on the work of dentists were being paid a much smaller income than dentists in private practice. By increasing these officials' salaries by a few thousand pounds, millions of pounds could be saved. At present he estimated that as little as 0·2 or 0·3 per cent of all cases were referred for investigation by the Dental Estimates Board, yet this small amount accounted for a saving which he believed to be 20 per cent.

If a cut had to be imposed—and he thought it had—it would be much better to adopt a sliding scale. He suggested that a dentist whose gross earnings were £450 per month should be cut by 2½ per cent. A dentist making £500 per month should be cut by 10 per cent, and a dentist making £600 a month by 20 per cent. In this way the man doing good work and taking his time would not be penalised. The man earning £20,000 or £30,000 a year, if a cut of 10 per cent were imposed, would simply work a little harder and the standard of his work would fall lower still. The cut should be spread so that the average dentist doing a good job would not be penalised.

Mr. Baird said that he held no brief for the dentists, but he believed that the Minister had not considered the matter fully before he made the cut. Something should be done now to break the deadlock between the profession and the Ministry. Mr. Baird appealed to both sides and said that he believed there had been a change of heart and the dental profession would like another chance to consider this problem. He appealed to the Minister to give them the opportunity. If the Association were in favour of the type of cut Mr. Baird suggested—a sliding scale or graduated cut—some gesture from the Minister would go a long way towards reopening negotiations. In the interests of an honourable profession which had done good work in the past but which, because of its political attitude over the last three years, had lost all public support, an effort must be made. It was bad for a profession such as this to lose public support and the time had come when they must come together and get the new Scheme working properly. Some gesture from the Minister would be welcomed both by the dentists and by the general public.

Sir Hugh Lucas-Tooth (*Hendon, South*) said that he did not deny for a moment that the cost of the general dental services needed reducing. There was something fundamentally wrong when the average dentist was being paid just about twice as much as the average doctor.

If the Spens recommendation of a gross income of £3,800 a year were strictly applied the payments made to the 10,000 dentists in the Scheme should total £38 million, whereas the current year's Estimates contain a figure of £46 million. He asked the Minister whether the 10 per cent cut was supposed to bring down the estimated figure to the Spens figure. Did the Minister reckon that the £46 million would be reduced to £38 million in this way ? The House would probably accept the idea that an average gross figure of between £3,800 and £4,000 was not very wide of the mark of what was desirable for dentists. He did not think that there was any very great difference of opinion in the House about a deduction of the order of 10 per cent being a proper one at the present time. That, however, was a deduction from the average amount payable to a dentist in respect of a fair year's work, and they should, therefore, disregard any other sums which might have been earned in view of the very special circumstances existing at the present time.

He did not think that there should be a limit to the high earnings of dentists purely for ideological reasons. On the contrary if the professional man could do twice as much work in a year as the average then he deserved to get twice the pay, provided he did twice as much work of the same standard. The enormous pressure of work on dentists who were making large incomes was beginning to tell on the dentists themselves and the quality of their work. That was why he thought that some limit should be set and the fundamental difficulty which had to be faced was the shortage of dentists. 12,000 or 13,000 dentists were trying to do the work of 15,000 or 16,000.

The Opposition accepted the principle of a free dental service as an essentially desirable aim, but the dilemma which they were now facing was that there were not sufficient dentists to provide such a service. If those dentists who were available were to be given what was considered a proper amount of pay and no heavy rewards for overtime the work would not be done. They were trying to bribe the dentists to do more work than they were physically capable of doing. If dentists fees were cut in the way proposed the queues for treatment would grow longer and dentists would tend to go back to private practice.

The 10 per cent cut could be nothing more than a

temporary expedient which would hit the new entrants into the profession perhaps harder than any other section of the dental service and would, therefore, tend to dry up recruitment. He asked for an assurance from the Government that this was a purely temporary measure and that at the earliest date they would go over the question of dentists' emoluments and produce a new scheme. He believed that it would have to be a much more fundamental change than they could discuss on the present Regulations.

The Parliamentary Secretary to the Ministry of Health (Mr. Blenkinsop) said that broadly speaking there was agreement on both sides of the House that there ought to be a further reduction in the cost of the dental services and that the figures now being earned by the dentists were higher on the average than that laid down by the Spens Report and higher than they could reasonably be expected to pay. Taking the average, something like £4,850 gross had been paid to each dentist over the year 1949–50. That left a figure of some £2,250 as against a figure of approximately £1,800 a year recommended in the Spens Report.

The Government had to take into account the fact that the Spens Report assumed a period of working which had been falsified by events. The period of chair-side hours assumed was in fact being exceeded. There was no doubt that the figures now being paid must be further reviewed and the main question was whether they were reviewing that high remuneration in the proper manner and whether they were satisfied that the way to do it was by making an overall cut of 10 per cent. They had to consider whether there was any other way of securing a reduction in the amounts being paid that would be fair both to the dentist and to the general public and would help to bring about a better dental service than the present one.

There was really no question here of what might be called an arbitrary cut. In fact there had been discussions with the dentists on this matter and the Minister had made it clear that they were most anxious to have alternative proposals as to the way in which the reductions could be obtained. But they did feel that although they were anxious to have alternative proposals this was not a matter which could be left for an indefinite time while alternative proposals were being worked out. This had been made clear in a letter to the British Dental Association which also explained that the 10 per cent cut was not put forward as a final proposal. The Ministry were most anxious at all times to consider any alternative proposals which might be put forward, but he had to remind members that in the past the Ministry had attempted one form or another of ceiling to dental fees. When the cut was imposed in 1949 some dentists refused to take any more National Health Service patients on reaching that ceiling and would only accept private patients. Where any proposals for a sliding scale were concerned the same difficulty would have to be considered.

No detailed scheme for a sliding scale had been submitted to the Ministry. Negotiations had been broken off by the dental profession. He would ask them most sincerely to come forward and make those alternative proposals to the Ministry. The sooner they did so the sooner it would be possible to introduce some other scheme. The Ministry were certainly not prepared to await such an alternative sliding scale scheme without taking some interim measures to secure effective reduction.

Mr. Geoffrey Cooper (*Middlesbrough West*) here asked in what circumstances negotiations were broken off by the dentists? The feeling abroad was that although they put forward suggestions they were met with a flat refusal.

Mr. Blenkinsop said that no such suggestion had been put forward. It was merely that the dentists said that they felt some sliding scale scheme would be preferable to the overall cut. The Ministry were not prepared to await the details of a scheme of that sort before taking action. The door was still open for negotiations and discussion should the dentists come forward with any new proposals.

With regard to the expenses ratio the Ministry were by no means satisfied that the 52 per cent was accurate to-day. They felt that it was too high a figure bearing in mind the volume of work that the dentists were undertaking. A review was being carried out of the expenses ratio. Earlier the dentists had co-operated but now he was not sure whether they were prepared to co-operate or not. The Ministry were anxious to have their help.

Mr. Baird's suggestion about more adequate supervision was a very proper one. The Ministry were hoping to improve the effectiveness of checking in future months.

Both sides of the House wanted to get dental remuneration into fair balance with other professional bodies within the Health Service and also to develop a proper standard of service for the general public. There was a big field in which the professional organisation itself could assist in effectively controlling its members so as to ensure that a proper service is given on the basis of the very adequate remuneration which was being paid.

Mr. David Eccles (*Chippenham*) remarked on the bankruptcy of the Minister who had no ideas except that of making a flat cut. Dentistry was not an attractive profession, and if they wanted to expand the labour force in a dirty industry they had to pay to attract recruits.

The 10 per cent cut would reduce the quantity of work done by the 10,000 dentists to-day. Even under the scheme proposed by Mr. Baird, of a graduated cut, a good many dentists would go and play golf when their income reached a certain limit. The cut might persuade certain of the older men to go back into the school dental service and steps ought to be taken to see that this did occur.

Mr. Eccles derided Mr. Baird's scheme of inspection of work done and said that he would prefer to trust to the general standards of the profession rather than call on men who had failed at the chair and went to the Ministry to go round teaching other people work they could not do themselves.

The dentist who by careful organisation and hard work was earning high rewards should be paid for the work he did. The status of the profession would never be raised without some plums at the top.

There were not enough dentists for a nation-wide Service. Therefore, they should do away with the system of paying the 10,000 dentists on the piece rate and then select the priority classes in the country to whom it was important treatment should be given. Firm steps should be taken to see that they are the first charge on the profession. Perhaps this could be done by making the

service free up to the age of 18 and for expectant mothers and then making adults pay something over and above that. It was up to the Minister to make a radical change in the whole dental service because at the moment by his bad administration he was diverting the dentists' services from those who needed them most.

Mr. Geoffrey Cooper said it would have been better if the Minister could have produced among the dentists right from the start the impression that he was trying to co-operate with them to the utmost extent, because by trying to be co-operative he could have reasonably expected co-operation from the dentists. The breaking-off of negotiations simply indicated that the Minister had perhaps acted in a way which was not best calculated to get the co-operation of the dentists that he might have got otherwise. He understood that negotiations were in hand and that undue delays were not being blamed on the professional negotiators. He therefore thought that if the Minister had held his hand for a short time he would probably have got an answer quite quickly. In industry where an industrialist suddenly cut the rate for a job he destroyed any confidence that there might be between the workers and himself. The Minister should try to avoid any suggestion of that sort. In a comparatively few cases work had been scamped but the high rate of earnings was due on the whole to dentists putting in an excessive amount of work. They did this in the public interest and it was, therefore, unhelpful if immediately they were penalised for it.

Mr. Cooper believed that if the expenses ratio was cut down too much it would discourage the high quality of work being done in the dental workshop. He suggested that at an early date the Minister should look at the sliding-scales suggested by the British Dental Association because he thought that the Minister would find the suggestions reasonable and that they would also meet with the general approval of the dental profession. The arbitrary imposition of a 10 per cent cut would not achieve this purpose but would make the dentists less co-operative. Conditions must be such as to encourage good men to come forward and take part in the scheme. Otherwise the scheme would break down.

They had to prevent the complete elimination of good salaries being capable of being earned for exceptionally good work. He thought that if the Minister were to delay a little he would find the dentists completely co-operative.

Mr. Iain MacLeod (*Enfield, West*) said that he regarded the new Regulations as a stride down the road to utility dentistry which the profession had been forced to embark upon during the last two years.

It had never been intended by the Spens Committee that every dentist should be able to earn the same sum. The Committee were discussing a particular age group and dentists with particular qualifications. The newly qualified dentist was starting at a figure considerably in excess of the Spens recommendation. Salaries were in fact being earned which were considerably higher than the Spens figure.

Mr. MacLeod agreed with the Government that too much money was being spent on the dental service. He agreed that the existing expenses ratio of 52 per cent was too high and should be reduced.

He also agreed that there were too few dentists to run a comprehensive service. In the early negotiations with the British Dental Association the Government had blinded the profession with gold. This was not the last cut which the dental profession was to suffer, and dental remuneration would not be profoundly affected by these Regulations. The Minister had created a paradise for the " spiv " dentists who saw in this scheme an attractive incentive to quick and shoddy work and the use of shoddy material.

The good professional dentist who was in the vast majority loathed and detested the contempt in which the public held his honoured profession. The dentist hated not being able to go to the golf club without someone saying " Here is a man earning £100 a day," and when turning on the wireless he found that he was the butt of every cheap comedian. Mr. MacLeod found the British Dental Association's scheme for a sliding-scale a little naïve and would have found it much more convincing if the Association had come forward at their own will with their suggestions and proposals before any cuts were proposed. He would rather see the Association's efforts concentrated on the ethical side of dentistry. Mr. MacLeod thought that there was a tremendous amount which could be done here and recalled a letter to the Press from two dentists in 1949 saying that if the Regulations limiting earnings went through Parliament they would earn their Spens maxima in 2½ days and play golf for the rest of the week. He thought this was one of the most disgraceful things he had ever seen in print coming from professional men.

What must be done now was to restate the priority classes in dentistry and to see that they got priority. They must try to get the co-operation of the dentists or even make it a condition of service to comply with the scheme for treatment of school children put forward by the British Dental Association. The present miserable tinkering with dental remuneration was not the way to secure a happy profession nor to give a good service to the people.

Dr. Hill (*Luton*) said that as there were too few dentists to provide a comprehensive service the Government should answer the question whether dentists should seek to provide a comprehensive service. It could only be provided by their working longer hours and at considerable speed. The difficulty of cost arose because remuneration had been arranged in the past on the assumption of a reasonable week's work at a reasonable pace. In order to deliver the goods to the people the dental profession had had to work longer and quicker than was reasonable, with here and there a lowering in the quality of the service.

If the Government intended that the dentists should seek to provide a comprehensive service, that factor must be taken into account in relation to the proposal to cut remuneration. The effect of the 10 per cent cut might in many cases be to speed up the pace of the work to earn the same money. But if the Government were seeking to maintain a good quality of dental work the question had to be answered : Which group is to be left out and which group is not to have the comprehensive service that was promised ? The groups which had been promised priority were the last of all to get it, notably children and mothers. The proposal for a sliding-scale did nothing to deal with the priority problem. It might,

however, be possible if that method were followed, to exempt remuneration received from local health authorities for school dental work from operation of the maximum.

He urged the Government when considering the dentists' proposals to adapt the scheme so as to do something to meet the priority needs. The present cut would penalise the dentist who had been working at his usual pace and with reasonable efficiency. It ignored the possibility of a mode of remuneration directing the attention of the profession to the work which in the public interest most needed to be done. He hoped the Government would not seek to continue to put off this main issue.

Mr. Emrys Hughes (*South Ayrshire*), who said that he represented the profession of coal mining, deprecated pleas for high remuneration based on contentions that a certain profession was a dirty profession. He hoped that the Minister would nationalise the dental profession in the interests of the general public and of the dentists themselves.

Mr. Baird then replied, as mover of the Motion. He said that there had been a dearth of ideas on both sides of the House how to solve the problem. He thought that it would not be solved until they had a fully salaried dental profession. The British Dental Association had put forward proposals and had argued about them. The dentists were divided almost 50–50 on them. If there were too few dentists, should free dental treatment for the general public be abolished in order to concentrate upon school dentistry? If we were to institute a grant-in-aid system it would be a return to the bad old days when people who could afford to get the treatment would have it and the working-class people would be unable to get it. The Health Service Act had raised the general health of the people, and a retrograde step like that suggested by the opposition would undo much of the good work which had been done.

Mr. Baird believed that there was a change of heart in the dental profession to-day. For a long while their attitude to the question was political. They were trying to exploit the situation for political ends. That stage in their history had gone and he believed that dentists realised the error of their ways, and that if the Ministry made a gesture to the dental profession to-day they would welcome the opportunity of entering into negotiations again. Mr. Baird said that he was speaking purely for himself and that he had no brief for the British Dental Association. He believed that the time had come to try to break the deadlock and in that effort both the profession and the Ministry had a part to play. It could not be done simply by imposing arbitrary cuts.

Mr. Baird then withdrew his Motion by leave of the House.

TIME LIMIT FOR COMPLETION OF TREATMENT

EVERY dentist in the General Dental Service in England, and Wales should have received from the Executive Council for his area a copy of a circular (E.C.N.54), issued by the Ministry of Health, which deals with estimates for treatment which has not been completed within the time limits laid down in the conditions of service, i.e. six months from the date of acceptance of the patient or from the date of approval by the Dental Estimates Board in cases where dentures are not being provided, and twelve months from the date of approval in cases in which extractions and the provision of dentures are included. These limits may be extended in suitable cases on application being made to the Dental Estimates Board: any such applications should be submitted to the Board not less than two weeks before the expiration of the time limit. In order to give dentists time to make the necessary arrangements the Board will, until September 30, 1950, ignore the fact that treatment has not been completed within the time limit. After that date, the circular says, "the Dental Estimates Board will feel bound to take note of estimates submitted out of time and may feel obliged to bring them to the notice of the Executive Council for reference as appropriate to the Dental Service Committee."

It is recognised in the circular that the application of its provisions may restrict the acceptance of new patients. The Minister, however, expresses the hope that this will not result in the refusal of patients who need urgent treatment for the relief of pain.

The circular also contains instructions regarding the procedure to be followed when a dentist is prevented from completing the treatment in time by the failure of the patient to attend for treatment.

Dentists in the General Dental Service who have not received a copy of the memorandum should apply to the Clerk of their Local Executive Council for one, quoting the number (E.C.N.54).

HOSPITAL MEDICAL AND DENTAL STAFF

THE Ministry of Health announce (R.H.B.(50) 44, H.M.C.(50) 43, B.G.(50) 39) that it has been agreed with the Joint Committee that practitioners below the age of 32 who, before the issue of R.H.B.(49) 115 had been graded as senior dental officers and who have been offered and accepted permanent contracts in that grade, should be allowed to mark time on the minimum salary for the grade, £1,300 per annum, until the first incremental date after their 33rd birthday.

Registrars and Senior Registrars.—The same circular lays it down that in the case of officers holding appointments in these grades increments of salary should be reckoned from the date of appointment to the grade and not as in other cases from July 5, 1948. Practitioners holding appointments in these grades who are appointed to another post in the same grade are permitted to retain the seniority and increments of pay in that grade as they had reached in the posts they already held.

Retrospective Applications of Conditions of Service.—The memorandum also deals with the procedure to be adopted in the case of permanent contracts which have not been completed in order to secure that the conditions of service and salary are made retrospective to July 5, 1948.

QUESTIONS IN PARLIAMENT

Dental Fees.—Mr. Geoffrey Cooper (Middlesbrough West) asked the Minister of Health on May 11 what steps he intended to take to safeguard the quality of dental treatment in view of the proposed reduction in dental fees under the National Health Service, and under which dentists who maintain the higher standards of work had found the present fees to be less remunerative than before the Health Scheme was introduced?

The Minister of Health replied that there was already machinery for dealing with any failure to employ proper

skill and attention and he could not accept the implications of the last part of the question.

Mr. Cooper asked whether the Minister would agree that the methods and rates of remuneration should be worked out in such a way as to encourage the best work and to discourage those who did shoddy and hasty work. Would the Minister consider any representations that might be made to him with that end in view?

The Minister of Health replied: "Certainly. The purpose of the weighting of the original scales was to encourage the dentists to conserve teeth and not take them out unnecessarily. The recent reduction has been necessary in order to bring about economies but I am always ready to meet representatives of the dental profession who have proposals to make."

In reply to a supplementary question by Lt.-Col. Lipton (Brixton) the Minister said that he had no recent information about dentists who turned away patients solely on the pretext that their fees had been cut, but the Ministry were continually contending with the low standards of some of the dentists.

Mr. Hastings (Barking) then asked whether the Minister did not agree that it was practically impossible to ensure good quality work when dentists were paid for the work done?

The Minister replied that it was of course always impossible to guarantee a certain amount of professional skill and that could only be done by raising the standards of the dental profession.

Treatment with Fluorides.—In a written reply on May 11, 1950, the Minister of Education said that a working party was set up in August 1949 by the Ministry to organise an investigation of the prophylactic effect of the local application of a solution of fluorides to schoolchildren's teeth. As part of this investigation the teeth of about 3,000 children in different parts of the country were now being treated in this way with the consent of their parents. This was a piece of long-term research and it might be some years before the results were known.

Dentists in the Health Service.—On January 1, 1950, there were 9,495 dentists on the dental list in England and Wales of whom 669 were assistants. (Mr. Bevan.)

The corresponding figures for Scotland at March 31, 1950, were stated by the Parliamentary Under-Secretary for Scotland to be 1,231 dentists, of whom 110 were assistants.

Savings in the Health Service.—Mr. Houghton (Sowerby) asked the Minister of Health what inquiries he had made through the Dental Estimates Board and otherwise about the direct or indirect saving to the National Health Service as a result of the efforts of dental officers of his Department and in respect of the dental officers of the Dental Estimates Board respectively, and whether the results of these inquiries were to be published.

In a written reply Mr. Bevan said that sample inquiries had been made by the Board and his own Department but that he did not think that the results of these small samples would justify publication.

Dental News

BRYAN J. WOOD—A PRESENTATION

BLUE skies and brilliant sunshine were a fit setting for a very pleasant ceremony on Saturday afternoon, May 13, when Mr. Bryan J. Wood was presented with the portrait of himself painted by Mr. Frank O. Salisbury (reproduced on another page of this Journal).

The President of the Association, Mr. J. M. Macrae, making the presentation on behalf of the subscribers, said that those present had gathered to pay tribute to a man who had devoted his adult life to the service of dentistry—service of the British Dental Association, the dental profession generally and, last but not least, the Public. After briefly narrating Mr. Wood's early activities, Mr. Macrae referred to his connection with the Public Dental Service Association, and his appointment as Treasurer to the British Dental Association. "This," said Mr. Macrae, "was his *métier*, for his great statistical ability and his skill in understanding figures were matched by his happy knack of making them intelligible to the membership."

Continuing, the President referred to the success of the choice of Mr. Wood as Chairman of Council. "His presentation of the Council's Report and his logical and orderly arguments in support almost always convinced a rather recalcitrant Board that the Report should be approved."

"In 1937 he was installed into the Presidential Chair of the B.D.A., and at the end of his term of office all seemed set that our honoured guest of today would retire from the turmoil and disappointments of dental politics. This course was not acceptable to his dynamic nature, and instead of well-earned retirement, he chose the Editorship of the *B.D.J.* In this post he displayed his great adaptability for he took up the difficult job of editorship as if he had been in dental journalism all his life. The reputation of the *British Dental Journal* was, and still is, greatly enhanced under his enthusiastic leadership and its financial stability was soon assured.

"Finally," added the President, "we must all realise that this wonderful record could not have been accomplished without loyal support and encouragement from that charming lady, Mrs. Wood, and we humbly and gratefully extend to her our felicitations for her part of the work. She provided a home life, a real and happy home life, which must have been a source of rejuvenation and inspiration to her husband."

The portrait was then unveiled and the President handed to the Editor a book containing the names of all subscribers to the presentation.

Mr. Wood who was greeted with prolonged applause and was obviously moved by the warmth of his reception, said he had made many speeches in that room, most of them directed to persuading the Representative Board to approve of some course of action which he had every reason to suppose they heartily disliked and now, when he had to speak on a matter which their kindness had given him some reason to believe met with general approval, it was difficult for him to find words adequately to express his feelings. "My entry to the profession," he continued, "was somewhat fortuitous. My sponsor into it, however, was that grand old man William Waite, one of the original members of the Association. I count myself fortunate in that I commenced my career in the Association in the Eastern Counties Branch. For, with the greatest respect to my many friends in the other Branches of the Association, I believe the Eastern Counties Branch to be the most friendly of them all. I imagine that I made myself such a nuisance to my elders in the Branch that they decided that the best thing they could do was to get the young man to write letters *for* them rather than *to* them. And so, as Hon. Secretary, I became a member of the Representative Board, of which, except for one short period of a month or two, I have been a member ever since."

Mr. Wood recalled as perhaps prophetic an occasion when, as a member of a committee on legislation he sat in the outer room of the Hanover Square offices of the Association, on a bundle of *British Dental Journals*, all the chairs being occupied by senior members.

Referring to the satisfaction to be derived from friendly co-operation in the common cause of the advancement of the Profession and the enhancement of the prestige of the Association, Mr. Wood added "Indeed, my most enduring memory of my forty years' work in the Association is that of the friendliness which has been extended to me in such liberal measure even by those who have disagreed with me, more or less violently, on one question or another."

As a typical example of this friendliness, he recalled that, within a few weeks of his appointment as "a young and inexperienced Chairman of Council" he had to put forward a highly controversial resolution to which there was considerable opposition led by Sir Norman Bennett—then at the height of his power. When eventually the resolution got a small majority "Bennett went out of his way to come across the room at the end of the meeting to shake me by the hand and congratulate me."

In a reference to his contact with the leaders of the Incorporated Dental Society, Mr. Wood paid a tribute to Fred Butterfield with whom "one had only to work for a short while in order to discover something of the reason why he was so well loved by his fellow members of the I.D.S."

Mr. Wood concluded:

"You have, sir, done me a great honour and I hope you will not think me greedy if I ask you to do me one more. This book you have given me I shall greatly treasure. My family would like to keep this portrait for a little time, after which I should be honoured if the Association would accept it and hang it at Headquarters, which I hope I may, without presumption, regard as its spiritual home. I am emboldened to make this request because I realise that, when the name of Bryan Wood will convey nothing to anyone less erudite in the by-paths of dental history than Dr. Lindsay, the Association will still be able to congratulate themselves on possessing this example of the work of one of the greatest of our British portrait painters."

The meeting ended with the presentation to Mrs. Wood, delightfully introduced by Dr. Lindsay, of a spray of flowers as a token of the affection with which everyone regarded her.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Faculty of Dental Surgery

THE Annual General Meeting of the Faculty of Dental Surgery of the Royal College of Surgeons of England is to be held at the College at 3 p.m. on Friday, July 14. Fellows and Licentiates in Dental Surgery of the College can obtain copies of the agenda of the meeting by applying to the Secretary of the Faculty, Lincoln's Inn Fields, London, W.C.2, three days before the meeting.

Following the Meeting, at 5 p.m., the Charles Tomes Lecture will be delivered by Professor A. B. P. Amies of Melbourne. The Annual Dinner of the Faculty will be held in the College in the evening of the same day.

INDUSTRIAL ELECTRIC MOTORS FOR DENTAL PURPOSES

WRITING with reference to Mr. R. Cutler's article on electric motors (*Brit. dent. J. April* 21). A correspondent points out that there is at least one firm of dental traders who market a dental lathe which incorporates the Hoover Industrial Motor. This is of ¼ H.P. and has a speed of 2,850 r.p.m. The retail price of this motor is £8 10s. and a new and improved type is to be put on the market in June which is to cost £9 10s. complete with chucks and cable.

XIth INTERNATIONAL DENTAL CONGRESS

London, July, 1952

ARRANGEMENTS for the International Dental Congress to be held in London in the latter part of July 1952 are now well advanced. The subscription of active members of the Congress will be £5, if payment is made before January 1, 1952. After that date the subscription will be £5 10s. Members of the International Dental Federation (F.D.I.) who become members by July 1950 will be admitted to full active membership of the Congress on payment of half the subscription. Applications for membership of the F.D.I. should be addressed to Mr. G. H. Leatherman, 35, Devonshire Place, London, W.1, and for membership of the Congress to the General Secretary, XIth International Dental Congress, 13, Hill Street, Berkeley Square, London, W.1.

ROYAL ACADEMY OF MEDICINE OF IRELAND

Odontological Section

THE Odontological Society of Ireland has been invited by the Royal Academy of Medicine to form an Odontological Section, to take its place amongst the different sections in medicine and surgery of the Academy.

This invitation has been accepted, the dental profession feeling that this constitutes a distinct recognition of its status in the sphere of preventive medicine in Ireland, and that it will open a new door to scientific endeavour, of which no doubt this and future generations of the profession will be glad to avail themselves.

SALARIES OF SCHOOL DENTISTS

LIVERPOOL Education Committee recently decided to grant a bonus of £200 per annum to their eight full-time dental officers. This was to be a temporary expedient pending the adoption of a national scale of salaries.

The general purposes committee of Gloucestershire County Council Health Committee have recommended that the county's salary scale for dental officers should be increased from £710–£910 to £800–£1,000 per annum. It was reported that there were thirteen vacancies for dental officers and that there had been no replies to recent advertisements. In Cheshire where there is almost a complete complement of dental officers, the county education committee have resolved that pending a revision of salary scales a bonus of £200 shall be paid to officers with ten years' experience and one of £100 to those with five years' experience.

The Schools

BIRMINGHAM DENTAL HOSPITAL

IN 1925 Messrs. Cadbury Bros. Ltd. presented to the City of Birmingham some 150 acres of land adjacent to the University at Edgbaston on the condition that this land was to be used either for recreational purposes or for the siting of hospitals. Plans were then laid for the creation of a "Hospitals Centre" there so that the various general and special hospitals sited in the centre of the city could be housed in new buildings. This was of course a long term programme but by 1938 a great new general hospital—the Queen Elizabeth—had been erected there with new buildings for the Medical School lying beside it and plans for a new dental hospital to be built on the same site had been completed. First the threat and then the outbreak of war put a stop to their practical realisation and the difficulties of the post-war situation have precluded their resumption.

The large post-war annual entry of dental students—three times what it was in 1939—made some expansion imperative and eventually it was decided to enlarge the existing dental hospital in Great Charles Street by the erection of Orlit huts on a site next door. This was formerly occupied by a building burnt to the ground in an air raid of 1941. These new buildings are now complete and provide accommodation for a new Prosthetic Department, for the training of students in the junior operative course on phantom heads, for a lecture room, for common rooms and locker rooms for students and staff, and for offices.

The equipment of the pre-war hospital was old-fashioned and in anticipation of a move to the Edgbaston site had not been renewed for a considerable period. Coincident with the expansion, the interior of the old hospital has now been entirely remodelled and re-equipped. There are 52 dental chairs in the three conservation rooms, all complete with units of the latest type. The General Anæsthesia Department is being enlarged ; there is a department with five chairs for parodontal treatment and preventive dentistry, a Children's Department and nine fully equipped private surgeries.

Though this has meant considerable expenditure, the site both of the old Dental Hospital and the new extensions is destined some day to be cleared when the remodelling of the centre of the city is taken in hand ; this is likely to be a number of years ahead. When national and local conditions permit of this they will also permit the erection of the long planned dental hospital on the Edgbaston site though it is unlikely that this will take the form of the pre-war plans. The structure of the Health Act and other factors have altered the situation. It seems likely that when that destined day dawns it will find what might be called the " casualty department " of the present Dental Hospital, that is to say the departments for extractions and oral surgery, housed in the new Casualty Block planned for erection at the General Hospital in the city centre where the professorial unit in dental surgery already has four beds at its disposal. The conservation and prosthetic departments will almost certainly be erected on the Edgbaston site as an annexe to the Queen Elizabeth Hospital, but it is possible that the Children's Department may be housed elsewhere, either at the Children's Hospital or as part of the school dental service. All this is in keeping with modern trends in hospital planning which on the whole discourage the erection of special hospitals and prefer the inclusion of special wards and departments in general hospitals especially in the teaching hospitals groups.

The operation of the National Health Services Act has vastly increased the demand for the services of every department in the Dental Hospital so that although the number of students has trebled there is no lack of clinical material for their training. Moreover, the staffing of the dental department at the General Hospital, by the professorial unit in dental surgery of the University has greatly improved the facilities for instruction in oral surgery.

Royal College of Surgeons of England.—*Final F.D.S.*—P. F. Gillett, L.D.S. R.C.S.Eng. ; D. C. Smith, L.D.S. R.C.S.Eng. ; G. E. Ray, L.D.S. R.C.S.Eng. ; E. H. Cooper, B.D.S.London; A. Karim, L.D.S.Singapore ; A. D. McIntyre, L.D.S.Leeds ; A. W. D. Cowan, B.Dent.Sc.Dublin ; H. D. Penney, L.D.S.Durham.

The Services

Territorial Efficiency Decoration.—His Majesty the King has been pleased to approve the award of the Territorial Efficiency Decoration (*T.D.*) to Major Keith Holman, Royal Army Dental Corps.

Personalia

Baron Cornelius Ver Heyden de Lancey, M.D., B.D.S., LL.B., L.M.S.S.A., L.D.S.Edin., Barrister-at-Law, has been sworn in as Advocate of the Royal Court, Jersey, Channel Isles. This is believed to be the first occasion on which a member of the dental profession has been accorded this honour.

Births

BURTON.—On May 10, 1950, at Queen Charlotte's Maternity Hospital, to Mary Frances, wife of John A. E. Burton, L.D.S., 22, Gayfere Road, Stoneleigh, Surrey, a daughter—Angela Mary.

FLETCHER.—On May 17, 1950, at the Radcliffe Maternity Department, Oxford, to Shelagh, wife of E. H. Fletcher, L.D.S. Eng., a daughter (Helen)—sister for Dilys.

MARTIN.—On May 17, at Nuffield House, Guy's Hospital, to Rosemary (*née* Orlebar) and Eric J. Martin, L.D.S. R.C.S.Eng., a son (Alan Orlebar).

Marriage

GLOVER—GARNETT.—On April 22, 1950, at Guildford, Surrey, Eric A. Glover, B.D.S., to Nina Doreen Garnett.

Deaths

BOUTWOOD.—On Tuesday, May 16, 1950, Ralph Boutwood, L.D.S.Eng., of 52a, The Drive, Sevenoaks, Kent and 2, Harley Street, London, W.1.

LLOYD.—On Wednesday, May 10, suddenly at 31, Broad Street, Ludlow, C. E. Lloyd, L.D.S. R.C.S.Eng., Guy's 1907, aged 66 years.

Our Diary

Saturday, June 3.

Public Dental Officer's Group—Scottish Section.—Midlothian County Rooms, George IV Bridge, Edinburgh, 2.30 p.m.

Monday, June 5.

Bromley and Beckenham Section.—Dinner Meeting, Eden Park Hotel, Eden Park, Beckenham, 7 p.m. Speaker: W. Kelsey Fry.

Saturday, June 10.

Scottish Committee.—Station Hotel, Perth, 2 p.m.

Tuesday, June 13.

Coventry Section.—Annual Meeting, Abbey Hotel, Kenilworth, 8 p.m., preceded by dinner at 7 p.m.

Thursday, June 15.

Metropolitan Branch.—Annual Clinical Demonstration Meeting, Eastman Dental Hospital, Gray's Inn Road, London, W.C.1, 2.30–6.30 p.m.

Friday and Saturday, June 16 and 17.

Southern Counties Branch.—Presidential Meeting, Spa Hotel, Tunbridge Wells. Friday : Morning, Golf Competition, Knole Park ; Council Meeting, Spa Hotel. Afternoon, Ladies' Excursion ; Practical Demonstrations, Sevenoaks. Evening, Annual Dinner. Saturday : Morning, " Social Dental Problems from the International Point of View," Dr. Ch. F. L. Nord (Amsterdam). Members of other branches are invited.

Tuesday, June 27.

Preston, Leyland and Chorley Section.—Starkie House, Starkie Street, Preston.

Monday, July 10—Friday, July 14.

British Dental Association.—Annual Meeting, University of Birmingham.

BRITISH DENTAL JOURNAL

Communications with regard to editorial business should be addressed to THE EDITOR, *BRITISH DENTAL JOURNAL*, 13, Hill Street, Berkeley Square, London, W.1. Telephone: Grosvenor 2761. Telegrams: "Bridention," Audley, London.

Original Articles and Letters submitted for publication are presumed to be offered to the *British Dental Journal* only, unless the contrary is stated.

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